JULY 23, 1938

THE LANCET

Offices: 7, ADAM STREET, ADELPHI, W.C.2.

Telegrams: LANCET, RAND, LONDON. Telephone: TEMPLE BAR 7228 and 7229.

No. IV., OF VOL. II., 1938. No. 5995. VOL. CCXXXV. LONDON, SATURDAY, JULY 23, 1938. Founded 1823. PUBLISHED WEEKLY. Registered as a Newspaper. Pp. 112—Price 1s. Annual Subscription: Inland £2 2s. Abroad £2 10s.

OXFORD MEDICAL PUBLICATIONS.

SEE PAGE 3.

Just Published. 12s. 6d. net.

INTRODUCTION TO

DISEASES OF THE CHEST

By JAMES MAXWELL, M.D. (Lond.), F.R.C.P. (Lond.)

For Contents see page 2.

Hodder & Stoughton Ltd., 20, Warwick-square, E.C.4.

FRACTURES.

By MEURICE SINCLAIR, C.M.G., M.B., CH.B. (EDIN.).

With an Introduction by Sir ROBERT JONES, Bt., F.R.C.S.

Pp. 550. 337 X ray photographs, photographs and diagrams. 24s. net.

Constable & Co., Ltd., London.

THE CLINICAL INTERPRETATION OF AIDS TO DIAGNOSIS.

Vols. I and II. Price 10s. 6d. each. Postage extra.

Volume I.—"Each of the 45 Sections included in the book is contributed by an experienced worker. . . ."

Volume II.—"We may say that the success of the first volume is here repeated. . . ."—BRITISH MEDICAL JOURNAL.

"Physicians and surgeons cannot afford to omit the knowledge here outlined. . . ."—BIRMINGHAM MEDICAL REVIEW.

London: THE LANCET LTD., 7, Adam-street, Adelphi, W.C.2.

DISEASES OF THE THYROID GLAND.

WITH SPECIAL REFERENCE TO THYROTOXICOSIS.

By CECIL A. JOLL, M.S., B.Sc., F.R.C.S. (Eng.).

Crown 4to. Fully Illustrated. £3 3s. net.

"Mr. Joll has presented his fellow practitioners and students with a monumental volume. They need not trouble to search the literature published up to the time this volume went to press, for they will find everything relevant within its covers."—BRITISH JOURNAL OF SURGERY.

William Heinemann (Medical Books) Ltd., 99, Great Russell-street, London, W.C.1.

3rd Ed., fully revised, 852 pp., 816 Illustrations.

EMERGENCY SURGERY. 50s. net; postage 8d.

By HAMILTON BAILEY, F.R.C.S.(Eng.).

Bristol: John Wright & Sons Ltd. London: Simpkin Marshall Ltd.

129 Illustrations (10 coloured). 12s. 6d. net; postage 6d.

DISEASES OF THE TESTICLE.

By HAMILTON BAILEY, F.R.C.S.

"... one of the best monographs we have read."—*British Journal of Surgery.*

London: H. K. Lewis & Co. Ltd., 136 Gower-street, W.C.1.

9 Plates and 135 Text Illustrations. 15s. net; postage 6d.

DISEASES OF THE

EAR, THROAT AND NOSE.

By J. DOUGLAS McLAGGAN, F.R.C.S. Eng. and Edin.

Surgeon in charge, Ear, Nose and Throat Department, Royal Free Hospital.

"... probably the best text-book in this speciality at the disposal of the student. . . ."—ST. BART'S HOSPITAL JOURNAL.

London: H. K. Lewis & Co. Ltd., 136 Gower-street, W.C.1.

PROBLEMS OF

ANÆSTHESIA

IN GENERAL PRACTICE

By D. H. LUKIS, M.D., B.S. Lond.

Late Hon. Anæsthetist, South London Hospital; late Clinical Assistant, Ear, Nose, and Throat Department, Queen's Hospital for Children, and Hon. Medical Officer, Kingston Victoria Hospital.

Demy 8vo. 7s. 6d. net (postage extra). 158+vi pages.

Hodder & Stoughton Ltd., Warwick-square, E.C.4.

SECOND EDITION.

DISEASES OF THE RECTUM AND COLON

AND THEIR SURGICAL TREATMENT.

BY

J. P. LOCKHART-MUMMERY,

F.R.C.S. ENG., M.A., M.B., B.C. CANTAB.

Emeritus Surgeon to St. Mark's Hospital.

Pp. viii + 616, with 247 Illustrations. Price 35s.

Baillière, Tindall & Cox, 7 & 8, Henrietta-street, London, W.C.2.

PRINCIPLES OF MEDICAL STATISTICS

By A. BRADFORD HILL, D.Sc., Ph.D.

Pp. 172+viii. 6s. net.

FOR CONTENTS SEE PAGE 4.

The Lancet Limited, 7, Adam-street, Adelphi, London, W.C.2.

MELANCHOLIA IN EVERYDAY PRACTICE.

By EDWIN HOPEWELL-ASH, M.D.

Includes chapters on manic-depressive psychosis; involutional melancholia; delusions and hallucinations; schizophrenia.

"We can recommend it."—GUY'S HOSPITAL GAZETTE.

John Bale, Sons, & Curnow, Ltd. Price 5s. 0d.

Free to the Medical Profession on request. Cloth-bound Ed. 5s.

ARTIFICIAL LIMBS.

"SOLVITUR AMBULANDO."

A Symposium on Prosthetic Achievement.

Pp. 72. 37 Coloured Plates.

"I congratulate you on this interesting, instructive and artistic production. I consider it to be a very great addition to my library."—M.B., Ch.B., F.R.C.S.

J. E. Hanger & Co. Ltd., 7, Roehampton House, Roehampton, S.W.15.

H. K. LEWIS & Co. Ltd., MEDICAL PUBLISHERS AND BOOKSELLERS

Textbooks and Works in Medical, Surgical and General Science of all Publishers.

Orders by Post or Telephone promptly attended to. Estimates given for binding. FOREIGN BOOKS Catalogues post free on Application. Sets of Periodicals bound to order.

Books advertised or reviewed in this Journal can be supplied from stock or to order.

Medical Stationery, Loose-Leaf Case Books, Card Index Systems, Filing Cabinets, Name Plates in Bronze or Brass, etc. Hand-painted Shields of the Arms of Universities, Hospitals and Colleges.

Department for SECOND-HAND BOOKS, 140 Gower Street.

MEDICAL AND SCIENTIFIC LENDING LIBRARY

Annual Subscription, Town or Country, from One Guinea. *Prospectus on application.*

LIBRARY READING ROOM (first floor) OPEN DAILY TO SUBSCRIBERS. Hours 9 a.m. to 6 p.m. Saturdays to 1 p.m.

136 GOWER STREET, LONDON, W.C. 1

Telegrams: "PUBLICAVIT, WESTCENT, LONDON." Telephone: EUSton 4282 (5 lines).

CALFO-RAYOL

SQUIBB

During pregnancy, lactation, in cases of rickets, osteomalacia, tetany, many allergic disorders, etc., supplementary calcium therapy is indicated.

CALFO-RAYOL (SQUIBB) is the only product which supplies therapeutically adequate quantities of calcium and phosphorus in correct ratio, and at the same time contains the Vitamin D necessary for the proper utilisation of these essential minerals.

Write for Samples and Literature to:

SQUIBB DEPARTMENT, SAVORY & MOORE LTD.
61 WELBECK STREET, LONDON, W.1

For the treatment of conjunctivitis, painful and tired eyes and pink eye, also for the relief of hay fever

PHENOLAINE EYE DROPS

Phenolaine is antiseptic and anæsthetic, so that the conjunctiva is not only rendered insensitive, but the infecting organism is also destroyed.

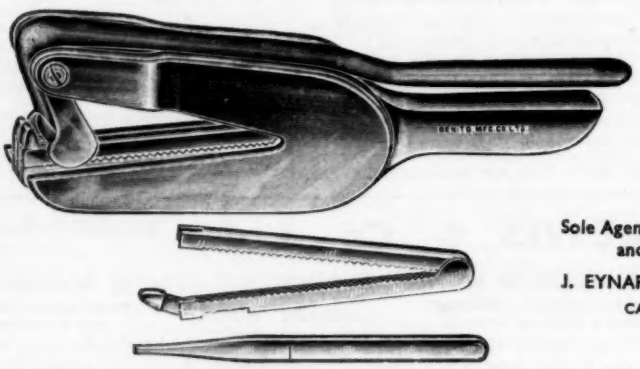
Samples obtainable from—

THE PHENOLAINE COMPANY
59, BREWER STREET, PICCADILLY, W.1 Gerrard 4741

CRUSHING CLAMP FOR LARGE INTESTINE

MADE TO THE INSTRUCTIONS OF ZACHARY COPE, Esq., M.S., F.R.C.S.
SEE THE LANCET, MARCH 24th, 1934

Makers of
CYSTOSCOPES
URETHROSCOPES
ENDOSCOPES
LITHOTRITES
Also
SURGICAL INSTRUMENTS
ELECTRO SURGICAL & ELECTRO MEDICAL INSTRUMENTS
INSTRUMENTS FOR THORACIC SURGERY
BRONCHOSCOPES, Etc.



Sole Agents for Great Britain and Colonies for
J. EYNARD & CIE (PARIS),
CATHETERS, Etc.

THE GENITO URINARY MFG. CO., LTD.

Telegrams:
CYSTOSCOPE, WESDO, LONDON

28A DEVONSHIRE STREET, LONDON, W.1

Telephones:
WELBECK { 2835 3 lines

JULY 23, 1938

THE LANCET

A JOURNAL OF BRITISH AND FOREIGN MEDICINE, SURGERY, OBSTETRICS, PHYSIOLOGY, CHEMISTRY, PHARMACOLOGY, PUBLIC HEALTH, AND NEWS

No. 5995 LONDON: SATURDAY, JULY 23, 1938 CCXXXV

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ADDRESSES AND ORIGINAL ARTICLES

The Profession and the Public. By C. D. LINDSAY, M.D. 179
Bile-duct Reconstruction over a Buried Rubber Tube. By T. B. MOUAT, F.R.C.S. (*illus.*) 181
The Action of a Hydrolysate of Striped Muscle on Malignant Tumours. By Prof. A. H. ROFFO, M.D. (*illus.*) 184
Dysentery due to *Bacterium dysenteriæ* (Schmitz). By ANN C. EVANS, M.B. 187
Individual Variations in Response to High Temperatures. By R. A. MCCANCE, F.R.C.P. 190
A Simple Method of Bronchography in Children. By N. M. JACOBY, M.R.C.P., and G. KEATS, M.B. 191
Effect of Synthetic Œstrogenic Substances on the Body-growth and Endocrine Organs of the Rat. By R. L. NOBLE, M.D. (*with chart*) 192
Vomiting in Diabetic Children. By W. W. PAYNE, M.B. 195

MEDICAL SOCIETIES

Brighton and Sussex Medico-Chirurgical Society: Rehabilitation of the Injured 197
Edinburgh Medico-Chirurgical Society: Thyrotoxicosis and the Results of Treatment ... 197

REVIEWS AND NOTICES OF BOOKS

Arthritis, Fibrositis and Gout. By C. W. Buckley, F.R.C.P. 198
Surgical Anatomy of the Head and Neck. By Prof. J. F. Barnhill, M.D. 198
Leukemia and Allied Disorders. By C. E. Forkner, M.D. 198
Introduction to Diseases of the Chest. By James Maxwell, F.R.C.P. 199
Dextrose Therapy in Everyday Practice. By E. Martin, Sc.D. 199

LEADING ARTICLES

REX *v.* BOURNE 201
THE INCIDENCE OF SYPHILIS 202
STUDENTS ON THE CURRICULUM 203

ANNOTATIONS

Vitamin B in Leprosy 204
Smoke, Plain and Coloured 204
Infanticide 204
Arachnodactyly 205
Staphylococcal Toxins and Immunity 205
The Doctor's View of War. 206
Mycopathologia 206
Ammonia Fumes 207
Tests for Prussic Acid Vapour 207
Post-graduate Schools 207
A Journal of Rheumatism. 207

CORRESPONDENCE

Testimonial to Dr. Hutchison 217
Artificial Abortion following Rape (Dr. G. W. B. James) 217
Infanticide (Sir F. Fremantle, M.D., M.P.). ... 217
Pseudo-dermatitis Autophytica. (Dr. F. Ray Bettley) 218
Chemotherapy by Rubiazol (Prof. L. P. Garrod, F.R.C.P.) 218
Diastolisation (Dr. H. W. Hales) (*illus.*) 218
Abortion and the Law (Lord Horder and others) 219
Refresher Courses under the Ministry of Health (Prof. R. B. Green, F.R.C.S.) 219
A "Harmless" Hair Dye (Dr. W. J. O'Donovan).. 219

OBITUARY

William Claughton Douglass, M.R.C.S. 227
James Abernethy, M.B. 227

SPECIAL ARTICLES

British Medical Association:—Proceedings of the Representative Body: Refugee Doctors—Power of Expulsion—Chiropody—Payment of Hospital Staffs—Travelling Facilities for Hospital Patients—Medical Representation in Parliament—Matrimonial Causes Act (*to be continued*) 208
A Charge of Illegal Abortion: Rex *v.* Bourne—Case for the Crown—Directions in Law—Case for the Defence—Medical Witnesses—Final Speech for the Defence—Final Speech for the Crown—Summing-up 220
The Medical Curriculum: Students Confer. 211
Beit Memorial Fellowships for Medical Research 213
National Hospital for Diseases of the Nervous System 214
Scotland: Surgical Research at Edinburgh .. 214
Medicine and the Law: Protection of Medical Witnesses 200
Dr. Cushing at Oxford 226

THE LANCET 100 Years Ago 229

GRAINS AND SCRUPLES

From an Aural Surgeon (IV) 215

PANEL AND CONTRACT PRACTICE

An Apology for Insurance Committees 216

PUBLIC HEALTH

Compulsory Notification of Measles and Whooping-cough in London—Distribution of Milk during the Summer Holidays—Modernisation of L.C.C. Hospitals 227
Infectious Disease in England and Wales 228

PARLIAMENT

Notes on Current Topics: Insanity as Ground for Divorce 228
Question Time: Rheumatic Fever in *Caledonia*—Abortion Committee's Report—Admission of Medical and Dental Refugees—Dependants of Insured Persons and Medical Benefit 228

MEDICAL NEWS

University of Oxford 230
University of Cambridge .. 230
University of London 230
Royal College of Surgeons of England 230
National University of Ireland 230
University of Dublin 230
Royal College of Physicians of Edinburgh 231
University of Manchester . 231
International Medical Congress for Psychotherapy 231
Osler Club 231
Voluntary Hospitals Emergency Bed Service..... 231
London Fever Hospital ... 231
Medical Candidates for the Irish Senate 231
Voluntary Hospitals Committee for London..... 231
Society for Relief of Widows and Orphans of Medical Men 219

Index to THE LANCET, Vol. I, 1938..... 207

NOTES, COMMENTS, AND ABSTRACTS

Malaria Research at Horton 233
Information From and For Hospitals 233
The Application of Astringents on a Rectal Plug in the Treatment of Hæmorrhoids (*illus.*).... 234
Forel's Campaign against Alcoholism 234
Holidays for Working Women 234

Appointments 231
Medical Diary 232
Vacancies 232
Births, Marriages, Deaths 234

A TEXT-BOOK OF THE PRACTICE OF MEDICINE

Edited by **FREDERICK W. PRICE, M.D., C.M., F.R.C.P., F.R.S. (Edin.).**

5th Edition. 2080 pages. 112 Illustrations. Standard Edition **36s.** net.

(Special small-bulk edition on India-paper, **45s.** net.)

'Represents English medicine at its best.'—*Irish Journal of Medical Science.*
'Pre-eminent as a book of reference.'—*St. Mary's Hospital Journal.*
'The most popular text-book extant.'—*Medical Officer.*
'A great event in the life of the medical student.'—*Bristol Medico-Chirurgical Journal.*
'Monumental.'—*Journal of the Royal Army Medical Corps.*
'All-inclusive.'—*Journal of the London School of Medicine for Women.*

OXFORD UNIVERSITY PRESS

Just Published

INTRODUCTION TO
DISEASES OF THE CHEST

By

JAMES MAXWELL, M.D. (Lond.), F.R.C.P. (Lond.)

Assistant Physician and Demonstrator of Practical Medicine, St. Bartholomew's Hospital; Physician, Royal Chest Hospital; Consulting Physician, Royal National Sanatorium, Bournemouth

CONTENTS

SECTION I
THE HISTORY

CHAP.
1. THE SIX MAJOR SYMPTOMS
2. THE SIX MAJOR SYMPTOMS (*contd.*)
3. MINOR SYMPTOMS
4. THE AUXILIARY HISTORY

SECTION II
PHYSICAL EXAMINATION OF THE CHEST

5. INSPECTION
6. PALPATION
7. PERCUSSION
8. AUSCULTATION

SECTION III
SPECIAL INVESTIGATIONS

9. THE SPUTUM
10. BLOOD EXAMINATIONS—PLEURAL FLUID
11. RADIOLOGY OF THE CHEST
12. SPECIAL DIAGNOSTIC METHODS

SECTION IV
DISEASES OF THE RESPIRATORY TRACT

13. THE NOSE
14. THE MOUTH
15. THE LARYNX
16. THE TRACHEA AND BRONCHI

SECTION IV
(*continued*)

CHAP.
17. ASTHMA
18. BRONCHIECTASIS
19. TUMOURS OF THE BRONCHI
20. CHEST INJURIES—DISORDERS OF THE PULMONARY CIRCULATION
21. EMPHYSEMA
22. COLLAPSE OF THE LUNG
23. PNEUMONIA
24. BRONCHO-PNEUMONIA
25. PNEUMONITIS
26. LUNG ABSCESS
27. PULMONARY TUBERCULOSIS
28. PULMONARY TUBERCULOSIS (*contd.*)
29. TREATMENT OF PULMONARY TUBERCULOSIS
30. NON-TUBERCULOUS CHRONIC LUNG INFECTIONS
31. FIBROSIS OF THE LUNG
32. THE PLEURA
33. "PLEURISY"
34. EMPYEMA
35. TUMOURS OF THE PLEURA
36. THE MEDIASTINUM
37. THE DIAPHRAGM

INDEX

With 95 Illustrations

Demy 8vo, 328+xii Pages **12/6 net (postage 6d. extra)**

HODDER & STOUGHTON Medical Publications

Warwick Square, London, E.C.4

ADDRESSES AND ORIGINAL ARTICLES

THE PROFESSION AND THE PUBLIC *

By Colin D. Lindsay, M.D. Lond.

EMERITUS PHYSICIAN TO THE PRINCE OF WALES'S HOSPITAL, PLYMOUTH

This is rightly said to be an age of youth but I still think that there is a lot of truth in the old Latin tag, *experientia docet*. I think that I can lay claim to that experience—experience moreover as a working member of the rank and file of the profession. The rank and file from their very nature are singularly "unvocal." For that reason if for no other, I welcome the opportunity that your action in making me your president has given one of them to speak publicly on their behalf.

I have said that this is an age of youth. It is also an age of planning. "Laissez faire," that principle beloved of our fathers, has done great things but it has outlived its time. All the signs and symptoms point to the fact that, whether we wish it or not, in every field of human activity, some form of control, of planning, is necessarily coming. We may not like the thought, but it is useless to kick against the pricks and it rests largely with us what form that control is going to take.

I want you to look for a moment on Medicine as a great industry. An industry whose product is the health, both physical and mental, of the community which it serves. I have a moment's hesitation in using this simile as the word "industry" has come to have a meaning that throws the emphasis on the indirect product—money—rather than on the direct product of the labour involved. This emphasis is, and I hope always will be, foreign to our own work.

As I see it this industry is one which is provided with a plant that is excellent, efficient, and up to date in practically every way. I do not think, however, that the best use is made of this plant. It has grown up haphazardly and piecemeal. There is great want of correlation, great duplication of effort.

GENERAL PRACTICE

First look at what we may call the selling end of the industry. If you want to buy some unusual article you go to a retail shop and make use of their experience, with wholesalers and the like, to get what you want from the most appropriate source. Some such arrangement is necessary in Medicine, and as things are at present this arrangement is not working smoothly. The fault is perhaps largely an administrative one, but I believe clear thinking on the exact nature and function of the medical practitioner is also lacking. The matter of health and its maintenance is so essentially a personal thing that the personnel of this (retail) division of our health industry must have a close personal relationship with the public as individuals. This relationship is only possible in a family doctor, either in his present form or in some altered, but essentially similar, form. At present there is a tendency for this branch of the profession to sink lower in the estimation both of the public and of the student body from which the profession itself is recruited. But a reaction from this attitude is inevitable. The more the public is educated and the more the health services extend and intrude into the lives of the people, the more will there be required an active and an intelligent family doctor service.

It will be no corps of clerks. It will require a wide professional training to ensure the early recognition of diseased states and the proper coördination of the specialist services, becoming daily more abundant. A good general education will be essential, also personality and mental agility, so as effectively to inspire confidence and assist in the education of a public which is rapidly becoming more enlightened. Again, it is in this sphere that the Cinderella of the medical sciences, medical psychology, may well come into its own. The amount of minor and major functional nervous diseases in the community is admittedly very large. The earlier it is recognised and treated, the more hopeful is the outlook, and owing to the lack of any obvious disability except in the later stages, it is only the general practitioner who can lead the attack. His position as trusted counsellor and family friend lends itself admirably to the purpose, and it is true even now that all general practitioners are, to a greater or less extent, psychotherapists. They would be much more effectively so if their training included some instructions in the principles of medical psychology.

This family doctor is the obvious connecting link for our medical industry. All direct contact with the public as individuals should be in the first instance through the family doctor. There should be no short-circuiting or duplication of his services.

SPECIALISM

At the back of this family doctor service there must be a specialist service. Medicine has grown so enormously that it is quite impossible for any one person to be proficient in every branch. The specialist is concerned more with one branch of disease, but in these days of specialism where the tendency is to dis-sever the various organs of the body it is wise to bear in mind the truth of the ancient saying "if one member suffers all the members suffer with it." That great surgeon the late Lord Moynihan is reported to have said that he liked to consider himself a physician who had sometimes to employ surgery to cure some of his cases. There is, moreover, a lot of mistakenly loose thinking on the subject of specialism. The family doctor when all is said and done is also a specialist, a specialist in the recognition of disease in its early stages and in the helping of his fellow men in the many little ills and troubles that beset them; and these may be important as a serious breakdown in health in later life may have its origin in trifling and unrecognised ailments of 20–30 years before.

I would like to see more attention paid to the treatment of the so-called minor ailments. It has been estimated that 40 per cent. of all sickness is due to the patient's own action. If this be true (and from my own personal experience I have found it so) think what a vast amount of sickness and ill health might be avoided; but this requires a willingness on the part of the patient to talk over his minor ailments with his doctor instead of going in for self-medication assisted by the chemist. Remember it is the general practitioner who sees the beginning of disease, the specialist mainly the end. There is no real reason why one branch should be from its nature more eminent than the other. They are essentially complementary and each requires for its proper performance attainments of the highest order.

Now in order to get material for practising his art, and facilities wherewith to treat them, the

* Abridged from the presidential address to the British Medical Association at Plymouth on July 19th.

consultant specialist is inevitably associated with a hospital. With the entry of the local authorities into the hospital field things are in a state of chaos in many areas. There are strong points in both voluntary and municipal systems and each can learn from the other. The one thing that is absolutely essential is the will for exponents of both sides to get together and work out for their own particular areas a scheme that will ensure this coöperation of both systems taking the best points of each and not allowing one to swallow the other. It is this will "to get together" that is all too often lacking.

PUBLIC HEALTH

Apart from the curative specialist services there is another specialist service which is necessary to the modern community: the medical officer of health service, or the specialist in social and legislative medicine. While the knowledge necessary for this branch is in many ways different from that necessary for the successful practice of individual medicine, it is dependent and very closely related with that branch. This correlation as things are at present is frequently extremely deficient, and for any smooth working of the medical services in a community more effective measures of amalgamation must be applied between the two branches. I believe that this can be supplied by the provision in each administrative locality of a medical advisory board consisting of representatives of each branch of the medical services —administrative, specialist, and general practitioner. Even now in a small way there are regulations which permit of some such council, and in the few neighbourhoods in which it has been tried it has been an unqualified success.

FINANCIAL CONSIDERATION

I have already said that the main emphasis in this industry of ours is rather on the results in the nature of the better health that it brings to its members. The real reward to the good doctor must always be the knowledge of having served the cause of humanity. Do we not all know how often the cases that give us most satisfaction are those that bring us least money?

The B.M.A. is an Empire-wide association of doctors for the advancement and dissemination of knowledge and the maintenance of a high standard of honour in the profession and *secondarily* for a just and fair remuneration from Government and public bodies. This is where the difference is found between the medical profession and a trade. In the former the primary motive should be to help the public with profit as a subsidiary factor. There are few indeed who could practise so time- and soul-consuming a work on a purely honorary basis. The vast majority of us must depend on our work for the expenses of living and the upbringing of our families.

I do not think I am wrong in saying that the whole subject of our remuneration is one that is increasingly preoccupying members of every branch of the profession. The correspondence columns of our journals and the agenda of our divisions, branches, and committees will bear me out. I do not presume to offer a solution for problems the complexity of which has taxed the brains of multitudes much more financially experienced than myself. There are, however, one or two principles which are to my mind fundamental.

The first point, which is at the same time the least controversial, is what is known as the principle of "free choice" of doctor. You may say that this is hardly a question of remuneration. That is true but indirectly it is of enormous importance because its acceptance makes extremely difficult the provision of any sort of salaried family doctor service. This I believe must be remunerated on a capitation basis as under the present National Health Insurance system. We as an association have just prepared a revised version of our proposals for a General Medical Service for the Nation, in which the two vital principles of free choice of doctor and of payment on an insurance basis are reaffirmed and their wide extension advocated. The first great extension we propose is the inclusion in the system of all members of all families within an income limit of £250 a year. We are seeking to double—no less—the number of individuals who receive medical service through N.H.I. The second extension we propose is that the service given should be medically complete—that is to say that it should include all forms of specialist, consultant, and auxiliary service as well as that provided by the general practitioner. I should not like to say which of those changes can do most for the public health.

Such is our official policy, far-reaching in scope and well suited to secure the full coördination of each and all of the country's health services. Our proposals would bring three-quarters of the community within an official system of medical service. Illness is not a steady event from season to season or from year to year and for this reason it lends itself particularly to treatment on an insurance basis. Both patient and doctor must surely prefer regular to irregular outgoings and incomings.

Within the last six months the Association has been instrumental in forming a National Federation of Provident Associations, which extends the insurance method up to a maximum income of £500 according to the number of individuals in the family, or to a maximum of £550 in the case of London, also taking into account the family income. I suggest to you that the principle adopted is one which, in the future, may well be much more widely applied.

It is of course the amount of the premium that is the difficulty. No man enters the profession of medicine with the idea of making a fortune. Equally no man can possibly fulfil the responsible and difficult rôle for which the family doctor of the future is surely cast without the possibility of remuneration sufficient to provide not only the necessities of life but also the cultural and social activities on which his full usefulness so much depend. Any capitation payment must provide this minimum and provide it on a basis of a number of patients per doctor which is not too large to prevent his giving the necessary time to each. This time is becoming increasingly more as our knowledge of therapeutic and diagnostic methods increases.

The remuneration of the consultative branches is subject to rather different conditions. Present consultative fees are high relative to those in the other branches. The reason for this is that the consultant has a comparatively short earning period. He has to serve a long and practically unpaid apprenticeship. It is hard to justify this. I would prefer a system where the status of consultant depended on hospital and clinic appointments carrying a reasonable salary which would vary with their responsibility. Were this so the payments for outside consultative work could be considerably lowered and would allow the young consultant, while always assured of a livelihood, to look forward to an improvement in his circumstances as his repute grew. These salaries would come from the funds of the hospitals, whether these were supported by the State or by "voluntary" contributory schemes. The days when the hospitals could be regarded as pure charities are gone. Very

few hospital patients could not afford to join some sort of contributory scheme.

PUBLICITY

Let us return a moment to our simile. Every industry, apart from its productive side, always has in addition a public relations or publicity side. Hitherto it has always been a keystone of medical policy that publicity or advertising is in direct antithesis to the best interests of the profession and of the public alike. The truth of this in regard to advertising by individuals is still undisputed. I think, however, that some form of group advertising by the profession as a whole is seriously overdue. In fact, this publicity side of our industry, hitherto neglected, could be developed to the benefit both of the industry itself and of the public which it serves.

Consider a moment this public. Taken as individuals and in times of sickness and stress, we all know that there can be nothing quite so touching as the almost blind trust which they impose in the Science of Medicine and in the particular practitioners that happen to be giving them the benefits of that Science. That is true of the public as sick individuals, but the public taken in the mass and in health does not trust either Medicine or the Medical Profession. Their attitude is an extraordinary blend of ignorance and superstition, in which they have unbounded confidence. Everybody thinks he knows all about Medicine without training or instruction.

What opportunity is there at present for the public to outgrow this ignorance and superstition? In the long run I suggest that education of the people must be the basis of any effective remedy. I think that this theme of public education in health is particularly apt at the moment. The health of the nation is very much in the public eye, and unless we guide the enormous enthusiasm that lies behind this campaign, there is a real danger that it may do more harm than good. I think we should go further than that. I think that teaching in elementary biology, anatomy, and physiology should be an essential and important part of all education, however elementary. Surely it is up to us and to no one else to see that it is included in the curricula of our schools. Similarly, courses of popular lectures could be arranged, if not officially, possibly by branches and divisions of our own Association. I have very little doubt that were they provided there would be no difficulty in finding audiences for them.

Second, I would suggest that there is a great opportunity awaiting both the press and the B.B.C. to do more in the educational field. Members of the medical profession could do much to help them in that task. Surely it should be up to us to see that a supply of well-informed and informing articles is available to whatever papers wish to use them and equally that the B.B.C. should be given all possible help in the provision of talks which would satisfy these two same conditions? Yet, I do not think that we must expect too much. We have to remember that both the press and the B.B.C. are limited by the educational attainments of those they serve. They can help and to some extent anticipate improved education on these matters in the schools. They cannot, I am afraid, take its place. That is why I have given first place to education in what I have said.

Third, I feel sure that it is only through education of the public that the public credulity in regard to advertised remedies can be removed. You all know what I mean when I speak of the evil of patent medicines. There are good proprietary medicines as well as bad. Some we make use of ourselves, others we could on no account condone or recommend. What matters is that because of the superstitious ignorance of the public there has grown up an enormous mass of advertisement literature for remedies that are famed to cure not only every disease known to the profession but also many diseases invented purely for the sake of being cured by some particular remedy.

The trade as it is now conducted could only flourish in a public which knows little or nothing of the true principles of health and healing. The schools can educate the public and we as a profession can tell the public. The more the public trusts us the more we are able to help and the sooner they will believe that we are truly endeavouring to protect them against themselves. It is by measures such as these and not by restrictive legislation that the true cure of the evils which I have mentioned will come.

MEDICINE AND THE WORLD COMMUNITY

I believe further that there is another sphere of education in which our entry might be of incalculable value. I like to believe, and in doing so I do not think I am entirely governed by prejudice, that the scientific world as a whole is to a large extent free from most of the jealousies which poison the interrelation of humanity in the world to-day. Scientists as a body approach nearer to the ideal world community than any other large division of mankind. Who has ever heard of class warfare between workers in any field of Science or of an embargo on the exchange of knowledge, whether intra- or inter-national. Even when something of the latter kind has been imposed from some political sphere, it has been met with prolonged and emphatic protests from the entire scientific world. The medical profession forms one of the most important divisions, both numerically and influentially, of the world of Science. Speaking as a whole the profession is really working in the common good of the community and not with the idea of screwing the last penny out of them. It is a true brotherhood, and in ordinary practice the individual doctors continually assist one another and pool their knowledge and advice to an extent quite unknown to the patient and the public at large; but it is also unique in that world because of its close relationship with the lives of the non-scientific laity. Are we not then in an ideal position to bring the ways of life and thought of one world to the benefit of the other?

BILE-DUCT RECONSTRUCTION OVER A BURIED RUBBER TUBE

BY T. B. MOUAT, M.D., M.Ch. Edin., F.R.C.S. Eng.

HONORARY SURGEON TO THE ROYAL INFIRMARY, SHEFFIELD

THE usual indication for reconstruction of the main bile-ducts is injury during cholecystectomy. This very serious mistake in technique usually happens when the operation has proved exceptionally difficult, and if in these adverse circumstances a simple and rapid method of correcting the mistake is likely to be effective, it should be preferred to the more difficult and elaborate operations which have been described (Horgan 1932).

The first case in which a buried rubber tube was employed to reinforce reconstruction of the common bile-duct appears to have been that of Doyen (1892), who was left with a gap of 4 cm. in the main

bile-duct after removing a large single stone from a pouch at the junction of the atrophied gall-bladder with the hepatic and common bile-ducts. He described the reconstruction as follows:—

Un drain de caoutchouc rouge fut introduit d'une part dans le canal hépatique, de l'autre dans le cholédoque; puis les deux orifices furent rapprochés autant que possible par une suture en surjet à points passés, qui réunit les lambeaux de la poche du calcul d'abord en arrière, puis en avant du drain. Un second surjet perpendiculaire au premier et cette fois longitudinal réunit par-dessus la suture les feuillets conjectifs et péritonéaux voisins. Cette suture fut renforcée a son tour par quelques points plus superficiels, et le ventre refermé.

The operation was done too late and, though bile passed into the intestine, jaundice persisted and the patient died on the ninth day from hepatic insufficiency.

The use of a buried rubber tube was later recommended by Sullivan (1909 and 1912), who had found in experimental work on dogs that this method was successful even when considerable gaps in the main ducts were bridged by tubing covered only by omentum. Sullivan considered that his method, even in average hands, would be found less difficult than hepatico-duodenostomy and, from the standpoint of biliary leakage, much safer. He gave the following account of his technique:

Into the stump of the hepatic duct an elastic rubber tube is inserted for about half an inch and securely sutured to it with several unabsorbable sutures. The other end of the tube is pushed down into the duodenum through the stump of the common duct, if possible, or if this is not possible, the tube should project through a small incision in the anterior wall of the duodenum about one half inch into its lumen.

The opening in the duodenum should be sufficiently repaired so that the cut edges snugly encircle the tube. At the point where the tube penetrates the intestinal wall, the tube should be firmly anchored to the duodenum with unabsorbable sutures. The duodenal walls are then sutured over it, so that for a distance of about 2 cm. before the tube penetrates into the intestine, it runs in a canal composed of overlapped duodenum. The tube is then anchored with unabsorbable sutures in several places to the duodenum and the gastro-hepatic omentum. In short the tube is to be put in with the idea of keeping it in situ as long as possible. The great omentum is then drawn up and a suitable area is selected with which to cover the exposed surface of the tube. This area is traumatised by drawing a dry sponge over it lightly a few times: similar friction is applied to the duodenum and the gastro-hepatic omentum on either side of the tube. The omentum is then placed so as to cover the tube, and to extend beyond it a centimetre or two in all directions, and is carefully anchored in position by several catgut sutures.

The rubber tube should have a lumen of not less than one quarter inch and should be soft pure rubber, yet resilient enough to retain its shape. Should the structures into which the tube must be passed not admit one of this calibre, stretching it along a stiff sound or a long-shanked forceps, thus decreasing its diameter, will make it possible to insert it easily.

Sullivan found that when the method was used in dogs and in normal tissues, if the tube remained in situ but a short time, a persistent internal biliary fistula was formed which showed no tendency to contract. The dogs were examined at varying periods, and microscopic sections showed "that the mucosa of the duodenum grows upward, and the mucosa from the duct downward into the new formed tube; and furthermore that the tissues comprising the walls of the artificial canal are formed peritoneal structures and not inflammatory deposits."

Sullivan's method is not ideal. When the hepatic or common bile-ducts are dilated plastic operation or choledocho-duodenostomy by suture is feasible, but where the surgeon has to deal with divided or damaged ducts of normal size simple suture reconstruction is not practicable, and duodenal flap operations (Walton 1921) are complicated and difficult.

Objections were advanced against the buried tube reconstruction, some of which have proved real in practice. Thus the tube may be passed into the intestinal canal too early, and stricture of the internal biliary sinus ensue. The tube may be retained too long, till it becomes blocked or disintegrates or forms stones, with recurrence of obstruction or infective cholangitis. Most, if not all, of these adverse results —some of which are illustrated in my own cases— appear to have arisen where some modification of Sullivan's technique has been used. I must plead guilty to this myself, for till recently I had not read Sullivan's own description of the technique, but in spite of the variations I used the method proved simple, effective, and life-saving in an emergency or in the bad operative risk offered by the jaundiced patient.

CASE RECORDS

I have employed it with some slight modification in four cases of immediate or later injury to the main ducts, and in three cases in which a "by-pass" choledocho-duodenostomy was established over an in-dwelling rubber tube to relieve jaundice due to disease of the pancreas, where the gall-bladder was not available. I am indebted to Mr. Blacow Yates for particulars of two additional cases, in which he did a common-duct plastic over a tube.

INJURY TO THE MAIN BILE-DUCTS

CASE 1.—A stout woman, aged 50. Operation on Dec. 6th, 1937. The gall-bladder was found packed with stones, one of which, the size of a walnut, was fixed in Hartmann's pouch. On completing the cholecystectomy I found that I had accidentally ligated and excised 1½ in. of the common bile and hepatic ducts, which were adherent across the front of the pouch with no evidence of a cystic duct. The bile-ducts were normal in size, and the gap was too great to permit of the cut ends being brought into apposition.

I left the ligature on the distal cut end of the common bile-duct, mobilised the duodenum, and inserted a small rubber tube by Senn's method (tube invaginated by two purse-string sutures of linen thread) into the duodenal lumen, so that about 4 in. of the tube protruded into the gut. The proximal free end of the tube was then held out of the way while a number of interrupted catgut sutures were inserted. These, when tied, pulled the mobilised duodenal loop up into contact with the lateral and posterior edges of the divided hepatic duct, which was cut across to present a fresh undamaged end above the accidental ligature. The rubber tube was then cut short with an oblique end, and the free inch which protruded from the duodenum was stretched and inserted into the hepatic duct, where it was anchored by a linen thread suture. The anterior gap was closed by interrupted catgut sutures which approximated the duodenal wall in front of the anastomosis to the front of the hepatic duct, and the union was reinforced by interrupted linen thread sutures on either side of and proximal to the cut end of the duct. There was some leakage of bile from the fifth to the tenth day, when the drainage-tube was removed and the wound healed.

The patient's progress was satisfactory; bile passed continuously into the bowel and she left

hospital on Jan. 8th, 1938, with the wound soundly healed. The tube was passed on March 10th and she is still quite well.

CASE 2.—A woman, aged 51. Operation on May 3rd, 1937. Stone impacted in the cystic duct. Thin pus and mucus in the distended gall-bladder. The contents of the gall-bladder were aspirated and the short stump of the cystic duct ligated proximal to the impacted stone. The common duct, which was slightly dilated, was opened and explored with negative result. The patient drained some bile for first few days after operation and then developed complete obstructive jaundice.

On July 1st the abdomen was reopened. The omentum was found adherent to the opening I had made into the supra-duodenal portion of the common bile-duct, which had a stricture at this level. On slitting up the stricture white bile escaped from the distended hepatic duct. The dilated hepatic duct was anastomosed to the mobilised duodenum over a ¼ in. rubber tube, of which 1 in. was fixed into the hepatic duct and 4 in. invaginated into the duodenum by Senn's method, as in Case 1. On July 26th the tube passed per rectum, and on Feb. 15th, 1938, the patient was well and had had no recurrence of the pain or jaundice.

CASE 3.—A woman, aged 44. June 12th, 1930: Cholecystectomy for acute cholecystitis. One large single stone and pus in the gall-bladder. Remained well for two months; then gradually developed complete obstructive jaundice.

Readmitted Oct. 20th, 1930, and after careful preparation, reoperated upon on Nov. 1st. Stricture of the common duct at the base of the cystic duct. Dilated hepatic duct anastomosed to the first part of the mobilised duodenum over a rubber tube, which was invaginated into the duodenum by Witzel's method by Sullivan's technique. On Nov. 18th she left hospital and six weeks later passed the tube per rectum. On Feb. 15th, 1938, she reported that she had had no recurrence of symptoms and was quite well.

CASE 4.—A thin woman, aged 57. Had lost 2 st. in weight. Sent into hospital with the diagnosis of gastric carcinoma. No history of jaundice. Barium meal negative. Cholecystogram showed gall-stones. April 16th, 1934: Cholecystectomy. Some thickening of the head of the pancreas, which was thought to be inflammatory. Developed a complete biliary fistula after operation. On May 14th the fistulous tract was dissected back and cut across at what appeared to be the base of the cystic duct. Base of fistula anastomosed over rubber tube to duodenum by Sullivan's technique. She was discharged from hospital apparently satisfactory on June 5th and passed the tube two or three months later. She continued to lose weight, and had dyspeptic symptoms, but was able to get about and do her housework for a year. She then became so weak and emaciated (weight 4 st.) that no further surgical interference was considered possible. She developed "black jaundice," vomited frequently, and died on Sept. 4th, 1935.

OBSTRUCTIVE JAUNDICE

CASE 5.—A man, aged 60. On Sept. 25th, 1936, five large stones, each about the size of the end joint of the thumb, were removed from the common bile-duct after the duodenum had been mobilised sufficiently to permit of their being pushed up to the opening made into the supra-duodenal portion of the duct. The duodenal papilla was then forcibly dilated by forceps passed through into the duodenum and the fibrosed and contracted gall-bladder was removed. He did well for some months and then became jaundiced, thin, and ill.

On August 7th, 1937, after preparation—10 c.cm. calcium gluconate intravenously for several days and abundant fluids—the abdomen was re-explored. The common duct was found greatly dilated. After mobilising the duodenum, exploring with forceps, and palpating the lower end of the common duct, it was thought probable that he had developed a stricture of the lower end of the duct, possibly as a late result of over-forcible dilatation at the previous operation. The common bile-duct was divided, the lower end ligated, and the dilated upper end anastomosed over a tube, which was sunk by Senn's method through the duodenal walls. After operation his condition was fairly satisfactory for five days. He then developed biliary leakage and some escape of the duodenal contents, which persisted for a week. There was no digestion of the wound edges (this accords with a previous experience of combined biliary and duodenal fistula). He was discharged on Sept. 2nd with the wound healed. On Dec. 22nd he felt a tickling sensation in the back of the throat and, after some retching, pulled the tube out of his mouth. The tube was examined by his doctor, who informed me that there was a slight erosion of the outer surface but the lumen was patent. Re-examined on Feb. 20th, 1938. Has kept well; gained 3 st. in weight and has had no recurrence of symptoms.

CASE 6.—A woman, aged 59. Cholecystectomy for gall-stones in 1927. Attacks of pain with jaundice recurred soon afterwards. Continuous jaundice with rigors for six weeks before admission. Operation on April 23rd, 1931. Chronic pancreatitis. Pus and gall-stones removed from the common bile-duct, which was dilated. The lower end of the common duct was ligated and the upper end anastomosed over a rubber tube, the lower end of which was invaginated by Witzel's method obliquely through the walls of the mobilised duodenum. The patient did well. There was no leakage of bile. The tube was retained for nine months and then passed per rectum in two bits. Re-examined on Feb. 5th, 1938, the patient said she had kept fit and well, except for a short gastric upset in August last after a charabanc trip to Blackpool. She had slight jaundice for three or four days after that but has been quite well since. She has a good colour and looks well, but has developed a scar hernia.

Retention of tube (Case 7).

CASE 7.—A woman, aged 67. March 6th, 1936: Obstructive jaundice. A contracted gall-bladder with stones. Dilated common bile-duct filled with dark bile and many small stones. Well-marked chronic pancreatitis. Cholecystectomy: stones removed from bile-ducts and "by-pass" choledocho-duodenostomy over an in-dwelling ¼ in. rubber tube by Sullivan's technique. Re-examined Feb. 15th, 1938. Has kept well. No recurrence of symptoms, but has procidentia uteri which prevents her leading an active life. The accompanying Figure shows that the rubber tube is still in situ. Too great a length of tube appears to have been introduced into the duodenum. The appearance suggests that it has become stiffened and infiltrated by bile salts, so that it remains fixed in the duodenal curve and cannot pass on into the jejunum. I suggested removal of the tube, but she has decided against any further operation as she is "nearly seventy and feels well enough."

ADDITIONAL CASES

(*Reported by* Mr. BLACOW YATES)

CASE 8.—In January, 1928, I did a cholecystectomy for subacute cholecystitis in a woman of 49. I injured the common duct in removing the gall-bladder but discovered this and did a suture of the duct over a rubber tube brought out of the common duct lower down, and so to the exterior. A smooth convalescence followed.

Some eighteen months later she was sent back to hospital to see me because jaundice had developed. I re-explored her and found the collapsed common duct with a fibrous stricture just below the porta hepatis at the site of the former suture. I was able to break through the fibrous lump, and out flowed mucus from the hepatic duct. This time I passed a tube into the hepatic duct and down through the stricture into the lower common bile-duct, and did the usual suture. The common duct was small and I found it difficult to use anything but a small tube of less than finger girth. I dilated the ampulla of Vater and the lower end of the tube appeared to pass through into the duodenum. She again made a good recovery. The jaundice disappeared and the wound healed, but the tube did not pass. Radiograms done at intervals showed the tube to be still in situ.

About a year after the second operation she started to get attacks of pyrexia and shivering associated with emesis and slight jaundice. A radiogram showed the tube still in situ, so I operated for the third time and removed it. It still lay in the common duct covered by bile sand; it was quite rigid and not easy to bend. Its rigidity I felt was a factor in its failure to pass spontaneously. Unfortunately she did badly after this operation and died of hepatic failure a week later.

CASE 9.—A woman developed a stricture of the common duct after a cholecystectomy performed by a resident surgical officer. I exposed the stricture and anastomosed the two ends of the common duct over a tube with a lateral strip cut out of its length. She made a smooth recovery and later spontaneously passed the rubber tube in a motion. The operation was performed seven years ago and so far as I know she has remained well ever since.

COMMENTARY

In my own cases I have never passed the tube down through the lower end of the common bile-duct into the duodenum, but have always mobilised the duodenum and anastomosed the hepatic or common bile-duct directly to the duodenum over the tube. I have feared that the tube might obstruct the pancreatic duct at the ampulla. Sullivan anticipated this possibility and recommends that, when the lower end of the common duct is utilised, care should be taken to cut a lateral window out of the tube where it passes through the ampulla to avoid any interference with the pancreatic duct. When the lower end of the common bile-duct is not utilised it should, if patent, be closed by ligature, to prevent any pancreatic secretion escaping upwards from it.

I have found it easier, contrary to Sullivan's advice, to perform the duodenal part of the operation first, before suturing the tube into the bile-duct to complete the anastomosis. The mobilised duodenum can be brought well up into the operation field, to facilitate introduction and fixation of the tube through its walls, either by Witzel's or Senn's method. The upper end of the tube, projecting from the duodenum, is then held aside, whilst the more fragile duct and the gastro-hepatic omentum are sutured down into apposition with the posterior and lateral edges of the duodenal opening. In short, the bed is prepared before the tube is cut down to a suitable length, and inserted upwards into the lumen of the duct, and the union completed by anterior sutures. Care must however be taken that the tube fixed into the duodenum is of suitable size to fit the duct, though in case of difficulty the size of its upper end can be reduced by stretching it or removing a longitudinal strip from its wall, so that it will fit into the duct.

Retention of the tube for too long a time seems to be more likely when it is too short and wholly enclosed within the common duct, or does not project for a sufficient length into the duodenum. The length of the tube should be about four inches: one inch or more in the hepatic duct—one inch when sunk obliquely or half an inch when sunk directly by Senn's method through the duodenal walls—and about two inches projecting free into the duodenal lumen. Too long a tube is equally undesirable, as it becomes lodged in the curve of the duodenum (Case 7) and is unable to take the duodenojejunal flexure to pass on into the bowel below.

REFERENCES

Doyen, E. (1892) *Arch. prov. Chir., Paris*, **1**, 149.
Horgan, E. (1932) Reconstruction of the Biliary Tract (with complete bibliography), New York.
Sullivan, A. G. (1909) *J. Amer. med. Ass.* **53**, 774.
— (1912) *Ibid.* **58**, 2026.
Walton, A. J. (1921) *Brit. J. Surg.* **9**, 169.
— (1923) The Surgical Dyspepsias, London.

THE ACTION OF A HYDROLYSATE OF STRIPED MUSCLE ON MALIGNANT TUMOURS

BY PROF. A. H. ROFFO, M.D.

DIRECTOR, INSTITUTE OF EXPERIMENTAL MEDICINE FOR THE STUDY AND TREATMENT OF CANCER, BUENOS AIRES

IN recent years experimental cancer research has been directed towards therapeutic substances derived from living tissue. There have been indications that these tissue substances do act on neoplastic cells—having effects which have been variously ascribed to hormones, to secretion products, or to products of metabolic disintegration. The aim in therapeutics is to obtain a substance which will inhibit the growth of cancer cells while not affecting normal cells, and this may either act directly upon the neoplastic elements or so modify the biological soil as to make it resistant to the development of tumours.

Last September I reported to the Argentine Society for the Study of Cancer the results of an experiment which demonstrated a definite action of striped-muscle extracts upon cancer cells both in vitro and in animals with tumours. This experiment was undertaken because striped muscle-fibres are known to be resistant to the development of tumours. Although striped muscle is the most abundant tissue in the body, it is recognised that malignant tumours do not develop from its actual striped elements. The tumours described as rhabdomyomas are extremely rare and Letulle (1931) states that these are mixed teratoid tumours, a view which is confirmed by Aschoff (1930). In 70,000 patients at the Institute of Experimental Medicine I have not seen a single tumour formed from striped muscle-fibres—a fact which is the more remarkable as these patients included over 23,000 with malignant tumours of various kinds. It is notable too that organs such as the tongue, which consist of a mass of striped muscle-fibres, do not develop malignant tumours from this tissue, although carcinomas are commonly formed from the epithelium of their mucous membrane. The few non-epithelial tumours described in the

tongue are myxomas, fibromas, spindle-cell sarcomas, and the like—that is to say, they are tumours formed from interstitial connective tissue and not from muscular tissue. Tumours of the myocardium are similarly exceptional; in most of the few cases described they have been metastatic or derived from the interstitial connective tissue—e.g., myxomas (Montaldo 1935), sarcomas (Rindt and Schwarz 1936), fibromas, angiomas, and lipomas. Rhabdomyomas of the heart have only been observed in the newly born. The majority of the secondary tumours described have been due to direct invasion and a few to vascular emboli.

It is clear then that there is some biological factor in striped muscle which makes it resistant to malignant proliferation, and I have tried to find where this resistance resides and how it might be used to produce regression of tumours and their products. The experiments have been of two kinds:

(1) *In vitro.*—To ascertain whether muscle extracts modify cell growth. We adopted the usual methods of tissue culture in use at the Institute, in which the substance under investigation is added to the nutritive medium.

(2) *In rats.*—We used white rats with tumours of two different types. These tumours have been transmitted from one rat to another for 28 years; they develop by transplantation with unfailing regularity and always show an evolutionary cycle of 40 days. The ample supply of these tumours makes it possible to control experiments satisfactorily.

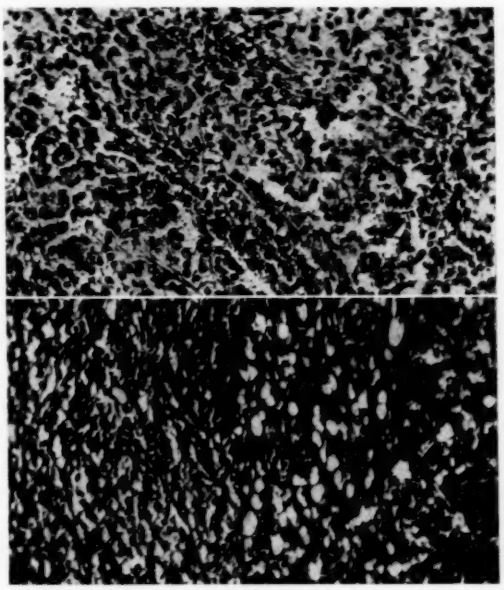


FIG. 1.—Histological structure of the adenocarcinomas (above) and spindle-cell sarcomas (below) in rats used in the experiments.

EXPERIMENTS WITH CULTURES IN VITRO

We have now studied the action in vitro of three products—aqueous extracts, autolysates, and hydrolysates. As long ago as 1926 I examined the action of autolysates of organs and tumours on the development of normal and neoplastic tissues in vitro, and demonstrated their inhibitory influence on cell growth—an action which is greater on neoplastic than on normal cells and varies in intensity according to the organ from which the autolysate is obtained (Roffo 1926). In a subsequent experiment (Roffo 1927) hydrolysates were found to have a similar inhibitory action on neoplastic tissue. It is interesting that fresh extracts not only did not inhibit growth of either neoplastic or normal tissue, but that extracts of organs such as the brain and of tumours themselves, which are very rich in lipoids, actually stimulated growth.

A B

FIG. 2.—Effect of the injection of a hydrolysate of bovine heart muscle on the growth of transplanted carcinomas. (A) Controls, uninjected. (B) Injected rats killed 40 days after transplantation of the growth.

In considering these results we should remember that in the process of autolysis and hydrolysis, the proteins are broken down into a number of compounds of which the amino-acids and polypeptides seem to be, in the last instance, the active substances. The differences in the behaviour of aqueous extracts, hydrolysates, and autolysates can be attributed to the presence or absence of amino-acids in the culture medium, for these bodies do not provide the nitrogen required by the cells for the synthesis of protoplasm.

In experiments with striped muscle similar results have been obtained, with an even more pronounced selective action on neoplastic cells, the effect being the same with autolysates and hydrolysates. On the other hand the development of the fibroblasts of the heart of chicken and rats and of spindle-cell sarcomas in rats is quite unaffected by heart extracts in dilutions of 1 in 30. With an autolysate the fibroblasts of the heart develop well in solutions as concentrated as 1 in 10, whereas spindle-cell sarcomas will not show a similar growth in solutions stronger than 1 in 100. With hydrolysates spindle-cell sarcomas will not develop if the strength of the solution is greater than 1 in 1000. Results are similar with the hydrolysate of bovine heart, which produces a medium that is strongly refractory to the development of neoplastic cells but not to the fibroblasts of the heart, which serve as controls.

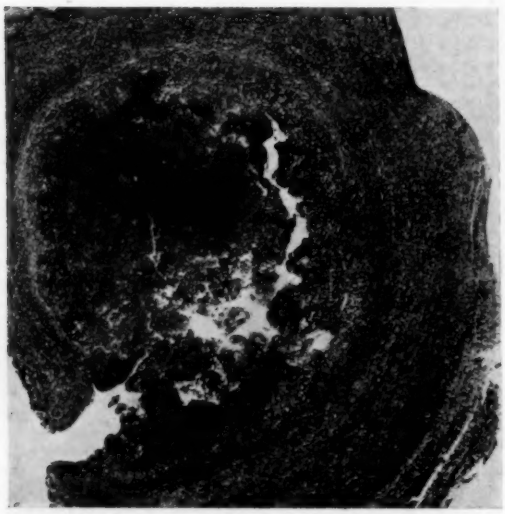


FIG. 4.—One of the carcinomas in the process of absorption. The necrotic tumour mass is surrounded by a zone of cicatricial tissue.

EXPERIMENTS WITH RATS

In these experiments I used an acid hydrolysate of ox heart. Heart muscle is digested for 76 hours with hydrochloric acid and then neutralised with sodium bicarbonate to a *p*H of 7·9. The result is, in my opinion, a solution of hydrochlorides of polypeptides.

The tumours used were of two histological types—namely, adenocarcinomas of the breast and spindle-cell sarcomas (Fig. 1). These have been transmitted by transplantation since 1909 (Roffo 1914) and during this period have produced more than 60,000 others, all of which have been actively malignant, and have had the same histological structure as the original tumours. Spontaneous regression of these growths has never been observed and they always produce death of the animal from cachexia within 40 days.

The results with tissue cultures led me first to try the effect of injecting hydrolysates directly into the tumours of these rats. For this purpose I used rats with tumours which had been growing for 12–19 days and were about the size of a plum. The rats were divided into two groups, one group receiving an injection of 0·5 c.cm. of hydrolysate into their tumours every 48 hours, and the other group receiving no injections. At the end of 40 days the control animals had all died of cachexia in the normal way and the others were all alive and their tumours had disappeared. The hydrolysate, then, appeared to have a definite effect upon the tumours when injected directly into them. Experiments were then made to see whether the hydrolysate acted in the same way when injected at a distance from the tumours. A series of rats were given subcutaneous injections of hydrolysate on the side of their bodies opposite to the tumours. The results in these and a series of controls are shown in the Table. In the rats which were given hydrolysate the tumours were completely absorbed with the exception of one which remained the same size as at the beginning of the experiment (Figs. 2 and 3).

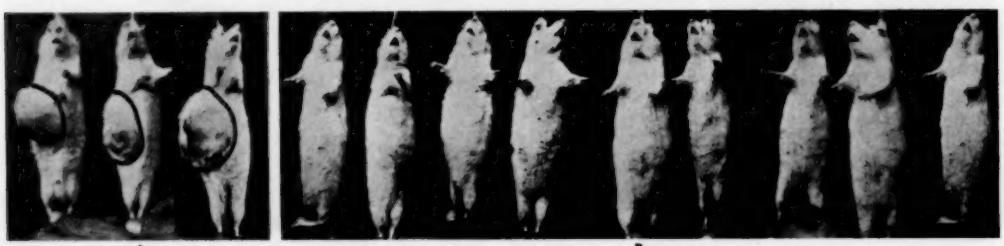
RESULTS OF SUBCUTANEOUS INJECTIONS OF HYDROLYSATE UPON TRANSPLANTED TUMOURS

Controls.		Injected rats.			
Weight of—		Weight of—		Weight of—	
Rat (g.).	Tumour (g.).	Rat (g.).	Tumour (g.).	Rat (g.).	Tumour (g.).
Carcinomas					
130	26	200	0	150	0
130	24	150	0	140	0
110	24	200	0	160	0
		190	0	190	0
		140	0	170	0
Spindle-cell Sarcomas					
130	31	200	0	140	0
130	38	150	0	200	0
130	27	190	0	130	0
		180	0	110	0
		140	4*		

Note.—The injections were made at a distance from the tumours 19 days after transplantation. The control rats were weighed at the time of their death; the injected rats 70 days after tumour transplantation.

*This tumour retained its original size. Histological examination showed foci of cytolysis.

The regression of the tumours takes place in a fairly regular manner. The first signs of regression usually appear after the sixth injection, and some tumours are then reabsorbed rapidly within 5 or 6 days; others, usually the larger ones, soften, and a black zone of necrosis appears in the portion of skin adhering to them, which is then eliminated leaving a scar (Figs. 4 and 5). Within a further 15–16 days tissue regeneration starts, by which time the tumours have quite disappeared, and ultimately



A B

FIG. 3.—Effect of the injection of a hydrolysate of bovine heart muscle on the growth of transplanted spindle-cell sarcomas. (A) Controls, uninjected. (B) Injected rats killed 40 days after transplantation of the growth.

perfect healing takes place. The general health of these animals improves notably, and after a few days they do not differ greatly from normal rats. We have now about 100 animals which have been through this process under observation.

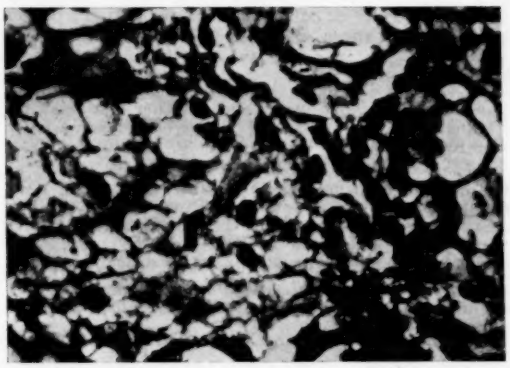


FIG. 5.—Part of the tumour shown in Fig. 4 under higher magnification, showing absorption, pyknosis, karyorrhexis, and cell vacuolisation.

DISCUSSION

Is the resistance of striped muscle-fibres to the development of malignant tumours due to their being more or less constantly in motion? Or to the action of some enzyme or hormone? Or to disintegration products formed during functional activity?

Our experiments so far do not allow us to give a definite answer. Nevertheless, the first explanation can be discarded, for there is no difference in liability to tumour formation between those muscles that are in almost continual function, such as those of the tongue and limbs, and those that are usually in repose, such as the psoas, the prevertebral, and the interosseous muscles. The existence of a muscular hormone is in my opinion doubtful, and our results with fresh heart extracts, which should contain the hormone if one exists, have been uniformly negative. The action of the hydrolysates is clearly due to some product of striped muscle, and I believe it can be explained by the effect of the products of disintegration of the tissue proteins, for in these hydrolysates such disintegration has been carried to a maximum. Experiments we are at present making with amino-acids support this view.

Although it is too early to speak of a cure of malignant tumours arising from these experimental results, I am reporting them in the hope that they may form the basis for new investigations.

SUMMARY

Previous experiments have shown that autolysates and hydrolysates of various tissues inhibit cell growth in vitro, the effect being greater on neoplastic than on normal cells, whereas fresh extracts of the same tissues have no inhibitory action.

The resistance of striped muscle to the development of tumours suggested that muscle extracts would be more active than those of other tissues in inhibiting the growth of malignant cells.

It was found that autolysates and hydrolysates of bovine heart muscle will inhibit the growth on culture media of spindle-cell sarcoma cells although the growth of fibroblasts is unaffected.

An acid hydrolysate of bovine heart muscle was found to cause regression of spindle-cell sarcomas and adenocarcinomas in rats when injected into the growth.

In the present experiment a similar regression was produced by the injection of hydrolysate at a point remote from the tumour. This effect is thought to be due to the presence of amino-acids in the hydrolysate.

REFERENCES

Aschoff, L. (1930) Pathologische Anatomie, Jena.
Letulle, M. (1931) Anatomie Pathologique, Paris.
Montaldo, G. (1935) *Arch. ital. Anat. Istol. patol.* **6**, 313.
Rindt, H., and Schwarz, H. (1936) *Z. Krebsforsch.* **44**, 66.
Roffo, A. H. (1914) Cancer Experimental, Buenos Aires, vol. i.
— (1926) *Bol. Inst. Med. exp. Cáncer, B. Aires*, **3**, 797.
— (1927) *Ibid*, **4**, 273.

DYSENTERY DUE TO *BACTERIUM DYSENTERIÆ* (SCHMITZ)

FIRST KNOWN OUTBREAKS IN GREAT BRITAIN

BY ANN CEINWEN EVANS, M.B., B.Sc. Wales

PATHOLOGIST TO THE NORTH WALES COUNTIES MENTAL HOSPITAL

IN dysentery occurring in the East *Bacterium dysenteriæ* Schmitz has often been isolated. Occasionally it has been reported in Europe but so far as I am aware it has not previously been identified as a cause of diarrhœa in this country.

The following account deals with two epidemics and sporadic cases of dysentery at the North Wales Counties Mental Hospital, Denbigh, between 1935 and 1938, in which the Schmitz bacillus is believed to have been the causative organism. It is proposed first to give an account of the laboratory findings: (1) in an epidemic of 35 cases in 1935; (2) in an epidemic of 129 cases in 1938; and (3) in several sporadic cases. Secondly, I shall discuss their significance especially with regard to their bearing on the identification of the bacillus and the establishment of its pathogenicity.

The 1935 Outbreak

In July to September, 1935, an outbreak of clinical dysentery affected 34 women and 1 man. The following laboratory investigations were carried out in relation to this outbreak.

PATIENTS

Fæces.—The motions of 29 of the clinical cases were examined: blood and mucus were present in two motions, mucus only in one. The remaining motions were watery. From 20 women and 1 man an organism was isolated having the morphological and biochemical characteristics of Schmitz bacillus: Gram-negative; non-motile, producing acid with glucose, but no reaction with lactose, mannite, dulcite, saccharose, and gelatin; forms indole. It gave no agglutination with Flexner, Shiga, or Sonne standard sera. Agglutination tests remained negative after subculturing and inhibition zones were eliminated. An endeavour to obtain Schmitz standard serum for agglutination tests was not successful, and therefore the organism was designated "atypical *B. dysenteriæ*." Six colonies were examined from each plate in order, if possible, to discover any alternative organism but none were found except late lactose-fermenters in 7 cases. From their chemical and agglutination reactions I concluded these were not of pathogenic significance.

In one patient (A. B.), who died on the fifth day of illness, *Salmonella aertrycke*, as well as the "atypical *B. dysenteriæ*," was cultivated from the motions. Post mortem, *S. aertrycke* was isolated from the gall-bladder but not from the liver or spleen.

Blood.—Cultures were done in 22 of the 35 cases; all were negative. All the 7 sera tested in agglutination tests against the "atypical *B. dysenteriæ*" isolated were negative except the serum of C. D., which gave standard agglutination in 1/25 dilution only. Agglutination tests were not carried out in lower dilutions than 1/25. All 7 sera were negative against the *S. aertrycke* isolated from the gall-bladder of A. B., except C. D.'s, which gave standard agglutination of 1/25 only. A. B.'s serum was not tested (died). Against standard agglutinable emulsions of group salmonellas the specific phases of the types Newport, aertrycke, Gaertner, paratyphosus A, B, and C, and against *Brucella abortus*, all 7 sera gave negative results, except for traces at 1 in 25 dilution with two. The results shown in Table I were obtained against standard agglutinable cultures of *B. dysenteriæ*.

TABLE I

Case	Flexner.					Shiga.	Sonne.
	V (F2).	W (F1).	X (F4).	Y (F3).	Z (F2).	F (2).	F (1).
1	st.1/20	slt.1/10	st.1/50	st.1/25	st.1/20	—	—
2	st.1/25	st.1/10	st.1/50	st.1/20	—	st.1/50	—
3	st.1/25	st.1/10	st.1/25	st.1/50	st.1/25	—	—
4	st.1/20	st.1/10	st.1/125	st.1/50	st.1/50	—	—
5	—	—	st.1/25	—	—	—	slt.1/10
6	st.1/25	st.1/20	st.1/125	st.1/25	st.1/25	st.1/20	st.1/10
7	st.1/50	st.1/10	st.1/250	st.1/50	st.1/125	st.1/25	st.1/10

st. = standard agglutination; slt. = slight agglutination only.

No. 7, a man, had previously received vaccine of *B. dysenteriæ* Flexner, which accounts for the rather higher titres in his serum.

CONTACTS

The remaining 109 healthy patients in the ward were examined. Among these, three carriers of *Bacillus paratyphosus* B were discovered. No carriers of *B. dysenteriæ* Flexner, Shiga, or Sonne were found. There were 9 patients who were carriers of the previously mentioned "atypical *B. dysenteriæ*," whilst 15 passed late lactose-fermenting organisms similar to the one isolated from 7 of the clinical cases.

The 1938 Outbreak

In January to March, 1938, an outbreak of dysentery occurred involving 129 patients.

PATIENTS

Fæces or rectal swabs.—An intensive examination of the motions of the first 62 clinical cases was undertaken. Blood and mucus were present in 26 per cent., mucus only in 9 per cent., whilst the remaining 65 per cent. were watery. Of the 62 cases examined 39 passed an organism having the same morphological and biochemical characteristics as the organism that was designated "atypical *B. dysenteriæ*" in 1935. No agglutination occurred with standard agglutinating sera of the Shiga, Flexner, or Sonne types. Specimen cultures of the organism were sent to Dr. W. M. Scott of the Ministry of Health, to whom I am indebted for identifying it as *B. dysenteriæ* Schmitz.

Cultures were tested against the sera of 20 patients. These agglutinations were carried out in dilutions of 1/5, 1/12·5, 1/25, 1/50, 1/80, 1/125. Standard agglutination appeared as follows:—

Maximum dilution ..	1/80	1/25	1/12·5	1/5
Number of sera ..	1	7	6	6

In 32 cultures isolated and tested against Boyd's 214 serum (titre 1 in 1000), kindly supplied by Dr. Scott, the agglutinations were carried out in dilutions of 1/500, 1/675, 1/840, 1/1000, and 1/2000. The highest dilutions in which standard agglutination occurred were as follows:—

Standard agglutination ..	1/1000	1/840	1/675	1/500	1/500
Number of cultures ..	1	11	14	5	1
Agglutination in 1/1000 ..	—	Yes	Yes	Slight	Nil

Of the cases passing the Schmitz bacillus, one also passed *B. paratyphosus* B and another *B. dysenteriæ* Flexner. In one other case *B. dysenteriæ* Sonne only was found.

Blood-sera agglutination tests.—The sera of 20 of the cases from whom the Schmitz bacillus had been obtained were tested against cultures of the bacillus and the results have already been recorded. Against standard agglutinable culture of *B. dysenteriæ* Sonne F (S) all were negative in 1/25 dilution.

The standard agglutinations against standard agglutinable culture of *B. dysenteriæ* Shiga F (S) were as follows:—

Maximum dilution ..	1/250	1/125	1/50	1/25
Number of sera ..	5	9	4	2

These reactions probably do not indicate a previous Shiga infection but their explanation is not easy.

The sera were not tested against standard cultures of *B. dysenteriæ* Flexner, since the patients receive periodical Flexner vaccine. Against the standard agglutinable salmonella group F (S) all were negative in 1/25 dilution.

Against standard agglutinable *B. paratyphosus* B culture F (S): all negative except one serum which gave standard agglutination in a dilution of 1/25 only. (The 20 sera tested did not include the serum of the patient from whom the *B. paratyphosus* B was isolated.)

CONTACTS

The 1938 outbreak, unlike the 1935 epidemic, was widespread throughout the hospital and it was deemed impracticable to examine all contacts. The kitchen staff, laundry staff, food handlers, &c., were examined with negative results.

Summary of Laboratory Findings

1935 epidemic.—An organism having the morphological and biochemical characteristics of *B. dysenteriæ* Schmitz was isolated in 21 out of 29 cases examined.

1938 epidemic.—In this epidemic the Schmitz bacillus was identified by its serological as well as its morphological and biochemical characteristics, and was found in 39 out of 62 cases examined.

In the interval between the two main epidemics a bacillus conforming morphologically and biochemically to the Schmitz bacillus was isolated from 12 cases of dysentery among the women. Of these, 9 occurred within a month and constituted a minor epidemic.

Discussion

Identification of causal organism.—In identifying the Denbigh strain of the Schmitz bacillus Boyd's 214 serum was used. This was first prepared by Boyd, who had found that high-titre serum prepared from the stock strain of *B. dysenteriæ* Schmitz was of little assistance in identifying the strain found in India (Boyd 1935). He therefore selected a strain (Laboratory index 214) of the Indian Schmitz-like organism. He found that the serum (Boyd's 214), obtained by inoculating a rabbit intravenously with

killed suspension of this strain, "allows the strain to be definitely identified by serological as well as biochemical methods." He explains that "the position of '214' and Schmitz, although not identical with the smooth and rough phases of Sonne, is probably analogous. The '214' strain over a period of four years has shown no tendency to form 'rough' variants, but it seems nevertheless highly probable that the strain now known as *B. dysenteriæ* Schmitz (and maintained by the National Collection of Type Cultures) is a variant which has developed from the strain originally isolated." It is interesting that although the Denbigh strain of the Schmitz bacillus was agglutinated in high dilutions by Boyd's 214 serum, the sera of the patients from whom the Denbigh strains were isolated agglutinated the homologous organisms in low dilutions only, one at 1/80, seven at 1/25, six at 1/12·5, and six at 1/5. These agglutinations, however, contrast favourably with patients' sera results, with homologous organisms, in a series of tests carried out by Manifold and DeMonte (1928) and also by Boyd. In these two series, although it is recorded that the patients' sera agglutinated suspensions of *B. dysenteriæ* Schmitz, they failed to agglutinate the homologous organisms.

Pathogenicity.—Although some authorities still consider the possibility that it may be a concomitant, the pathogenicity of the Schmitz bacillus is now usually accepted. Another view which has been advanced is that it is a modified form of a standard type. I am of the opinion that the following considerations arising out of these investigations help further to establish the position of *B. dysenteriæ* Schmitz as a pathogen.

If all positive bacteriological results obtained in cases of diarrhœa during each period of three months from October, 1933, to March, 1938, are arranged in chronological order Table II is obtained. It is apparent that there is a definite tendency for any one epidemic or series of cases to remain true to type with regard to the organism found. There are periods in which either the Flexner or the Schmitz type is chiefly found. To my mind this supports the position of *B. dysenteriæ* Schmitz as a pathogen for, were it a concomitant, it is difficult to explain why in some epidemics a pathogen only is isolated, whilst in others the concomitant predominates.

TABLE II—POSITIVE BACTERIOLOGICAL FINDINGS IN CASE OF DIARRHŒA 1933–38

Year.	Period.	Women.					Men.†		
		Flexner.	Schmitz.	Sonne.	Aertrycke.	Paraty. B.	Flexner.	Schmitz.	Sonne.
1933	Oct.–Dec.	9	..	..	..	..	7	..	..
1934	Jan.–March.	..	..	..	..	..	8	..	..
	April–June.	..	..	..	..	..	6	..	..
	July–Sept.	..	2	..	..	..	3	1	1
	Oct.–Dec.	..	4	..	..	..	2	1	..
1935	Jan.–March.	..	1	..	..	..	1	..	..
	April–June.	..	10	..	..	..	..	..	..
	July–Sept.	..	20	..	1*	..	..	1	..
	Oct.–Dec.	..	..	..	..	..	..	..	..
1936	Jan.–March.	9	..	..	..	..	..	..	..
	April–June.	2	..	..	..	..	..	..	..
	July–Sept.	4	..	..	..	..	3	..	..
	Oct.–Dec.	4	9	3	..	..	1	..	..
1937	Jan.–March.	3	1	..	..	..	..	..	..
	April–June.	..	..	..	..	..	..	..	..
	July–Sept.	..	..	..	..	..	..	..	..
	Oct.–Dec.	1	2	..	..	..	..	..	..
1938	Jan.–March.	..	11	1	..	1*	1*	28	..

* Also passed *B. dysenteriæ* Schmitz.
† Aertrycke and paraty. B. = No result.

It is recognised that concomitants appear when dysentery bacilli tend to disappear from the stool. Boyd quotes Manson-Bahr (1920) as stating that "organisms giving similar biochemical reactions to these—i.e., Schmitz bacillus, &c.—may be isolated from true Shiga stools that have been allowed to decompose for a few hours." Boyd also quotes Calalb (1925) as stating that "these 'paradysentery' organisms (which he isolated in Rumania) were never isolated when cultures were made in the first days of the illness; that these organisms appeared only after the disappearance of true dysentery organisms; that their antigenic properties were related to those of standard Shiga and Flexner; that the latter organism after years of artificial culture tended to produce 'para-dysentery' forms." In consequence Boyd states that "the hypothesis is advanced by Calalb that para-dysentery organisms are none other than modified forms of the standard types." Boyd does not accept any of these explanations, and it is noteworthy that in my cases, where the specimen examined was taken by means of a rectal swab, passed immediately after a motion in the first few hours of the disease and planted immediately, the Schmitz organism was obtained.

The occurrence of pathogens other than the Schmitz bacillus in the two epidemics I described calls for comment. It will be remembered that these were 1 aertrycke in 1935, and 1 Sonne, 1 Flexner, and 1 paratyphosus B in 1938. Considering the fact that dysentery has occurred endemically and epidemically in this hospital for many years, their presence is not surprising. Analogous results have been produced by cascara diarrhœa when searching for carriers; 13 Flexner, 1 Sonne, and 3 paratyphosus B carriers were discovered in 477 cases. Moreover, the fact that there was only one of each alternative organism and that three of these four cases passed in addition the Schmitz bacillus points to the fact that they were suffering from a Schmitz infection whilst being carriers of the other organisms. Furthermore, there was no serological evidence that the 1935 epidemic was due to Aertrycke, nor was there any serological evidence that the 1938 epidemic was due to paratyphosus B or to Sonne. Although Flexner was isolated from one case in the 1938 epidemic the patients' sera were not tested against standard cultures of this organism in view of the fact that the patients receive periodical Flexner vaccine. Patients' sera agglutination tests for Flexner are not reliable in any case as the sera of newly admitted persons who have no history of dysentery agglutinate standard cultures of this organism above the diagnostic titre.

Conclusion

1. *B. dysenteriæ* Schmitz has been identified as the causal organism in an epidemic of diarrhœa in 1938. Evidence is brought to show that an epidemic occurring in 1935 was also due to *B. dysenteriæ* Schmitz as well as several sporadic cases which have occurred in the intervening period.

2. The investigation into these epidemics supports the position of *B. dysenteriæ* Schmitz as a pathogen.

I wish to express my appreciation of the great help afforded to me by Dr. W. M. Scott of the Ministry of

Health, and also I wish to thank Dr. F. G. Jones, the medical superintendent, for his permission to publish this article.

REFERENCES

Boyd, J. S. K. (1935) *J. R. Army Med. Cps*, **64**, 289.
Calalb, G. (1925) *C.R. Soc. Biol. Paris*, **92**, 1457.
Manifold, J. A., and DeMonte, A. J. (1928) *J. R. Army Med. Cps*, **51**, 6.
Manson-Bahr, P. H. (1920) *Trans. R. Soc. trop. Med. Hyg.* **13**, 64.

INDIVIDUAL VARIATIONS IN RESPONSE TO HIGH TEMPERATURES

AND TO THE PRODUCTION OF EXPERIMENTAL SALT DEFICIENCY

BY R. A. McCANCE, M.D., Ph.D.Camb., F.R.C.P.Lond.

ASSISTANT PHYSICIAN IN CHARGE OF BIOCHEMICAL RESEARCH, KING'S COLLEGE HOSPITAL, LONDON

WORK on sodium-chloride deficiency has been in progress in the biochemical laboratory at King's College Hospital for the last three years, and during this time its production and attempted production has been studied in a number of persons. The present paper contains scattered observations which, apart from their scientific interest, should be a help to others wishing to reproduce the syndrome. Full references to technical details are given by McCance (1938).

The chief difficulty has been to procure suitable subjects, and the nature of the experiments (McCance 1936) make it essential to consider the psychological make-up of the subjects very carefully before allowing even enthusiastic volunteers to participate. This was not fully appreciated when the work began and a number of experiments have had to be abandoned at one stage or another for psychological reasons. In one case the experience was rather an unpleasant one.

If the object of the experiments is to produce a *severe* deficiency, the subject must lose enough salt in his sweat to enable this to be brought about. Some information as to the prospects of success may be gained from the loss in the initial sweat, and by the third day it is usually possible to predict whether the desired degree of deficiency is likely to be attained. Table I shows the amount of water and minerals lost in 2 hr. 10 min. on the first day of sweating by a number of subjects, both men and women. These sweats were all carried out under standard conditions (McCance 1938). It will be observed that there are very great differences in the losses of water, sodium, and chloride. The subjects marked * were all successfully made deficient. The subjects marked † could not be made deficient enough for the purpose in hand in spite of persistent efforts. Even pilocarpine was tried on P. M. E., but without any success. Prolonged attempts were not made upon the other subjects, either because they were considered unlikely to lose enough salt or, in the cases of M. H. L. and E. M. W., because the experiments had to be abandoned for physical reasons. M. H. L. was sick as soon as she came out of the radiant-heat bath; E. M. W. became very nauseated after two days and then developed influenza. It is evident that, generally speaking, women tend to lose less water and salt in their sweat than do men (McSwiney 1934a and b), and the general impression gained from these experiments is that it would be difficult to find a really satisfactory female subject. Table II, in which may be found the

TABLE I—COMPOSITION OF FIRST SWEATS OR TRIAL SWEATS

Subject.		Total amounts lost under standard conditions.				
Initials and sex.	Weight (kg.).	Water (g.).	Sodium (g.).	Chloride (g.).	Potassium (g.).	Nitrogen (g.).
Males.						
R. A. M.*	65	1700	3·29	4·25	0·29	0·60
R. B. N.*	73·5	1545	2·44	3·36	0·44	0·88
D. W.*	75	3014	4·17	6·38	0·58	0·76
J. T. B.*	76·5	2470	4·95	7·00	0·45	0·83
R. M. L.*	72	1600	2·36	4·65	0·44	0·48
N. L. C.	76·5	1370	1·96	2·33	0·38	0·56
A. S. G.	70	1350	1·31	1·68	0·45	0·57
G. W. K.	78	1485	1·23	1·87	0·49	0·61
W. M. G.†	76	2084	1·76	2·34	0·40	0·79
Average	73·6	1846	2·61	3·76	0·44	0·69
Females.						
P. M. E.†	57·5	1825	2·14	2·72	0·35	0·68
E. M. W.	57	1280	1·56	2·28	0·29	0·47
M. H. L.	54	1412	2·13	2·73	0·13	0·42
H. L.	57·5	1340	1·57	2·12	0·26	0·33
M. M.	65	1075	0·92	1·33	0·24	0·29
C. W.	55	1141	1·62	2·18	0·26	0·29
N. R.	49	460	0·89	1·15	0·21	0·21
Average	56·4	1219	1·55	2·07	0·25	0·38

* Successfully made deficient.
† Could not be made seriously deficient.

TABLE II—LOSSES OF CHLORIDES IN SUCCESSIVE SWEATS

No. of sweat.	P. M. E.	W. M. G.	R. B. N.	No. of sweat.	P. M. E.	W. M. G.	R. B. N.
	g. Cl.	g. Cl.	g. Cl.		g. Cl.	g. Cl.	g. Cl.
1	2·72	2·34	3·36	6	N.D.	0·80	2·29
2	1·47	1·84	3·65	7	„	0·53	3·13
3	N.D.	1·34	3·25	8	0·14	0·55	1·55
4	„	0·84	2·80	9	0·16	0·61	2·46
5	„	0·92	3·00				

N.D. = Not determined.

losses of chloride (as grammes of Cl) in the successive sweats of three persons, shows why it is not always possible to predict success or failure from the initial sweat. P. M. E. was the first subject and it was not then realised how much the losses of salt might fall off from day to day as the deficiency developed. Balance experiments were not being carried out, and the 3rd to the 7th sweats were not conducted in a quantitative way. Only when the expected deficiency failed to develop were quantitative sweats again carried out. It was then found that she was losing almost no sodium chloride and that further efforts would not be successful within a reasonable length of time. For the same reason W. M. G. could not be made deficient enough to interfere with his excretion of nitrogen in spite of 12 sweats (the last 3 are not given in the Table). In contrast with this R. B. N. was made deficient enough by 9 sweats to raise his blood-urea to 90 mg. per 100 c.cm. and greatly to depress his functional renal capacity. It will be seen from the Table that this was due mostly to the fact that R. B. N.'s losses did not fall off so much from day to day. His initial losses were little different from those of P. M. E., particularly when their differences in weight are taken into account (Table I).

These individual variations in response to high temperatures may provide an explanation of the different ways in which people working in hot atmospheres or living in hot climates react to their surroundings. Some, like P. M. E. and W. M. G., would probably never suffer from the major symptoms of

salt deficiency, while others like R. B. N., who continue to lose considerable quantities of salt in their sweat, are very likely to suffer unless they are provided with a generous intake of sodium chloride.

There is another variable among subjects but over this the investigator can exercise no control. Some persons undoubtedly show signs of deficiency more quickly than others for a given loss of salt. R. A. M. for example was made seriously deficient with 5 sweats and a total loss of chloride through this channel of 17·7 g. D. W., after 9 sweats and a loss of 31·9 g. of chloride, showed little if any more signs of deficiency.

SUMMARY

In trying to produce severe salt deficiency by diet and sweating it is advisable to pick subjects (*a*) who possess suitable mental calibre, and (*b*) who are so constituted physically that they lose, and continue to lose, a sufficient quantity of salt during the daily exposures to high temperatures.

I am much indebted to the subjects for their coöperation and to Miss E. M. Widdowson for all her help. Some of the expenses of the investigation were defrayed by the Medical Research Council.

REFERENCES

McCance, R. A. (1936) *Lancet*, **1**, 643, 704, 765, 823.
— (1938) *J. Physiol.* **92**, 208.
McSwiney, B. A. (1934a) *Proc. R. Soc. Med.* **27**, 839.
— (1934b) *Lancet*, **1**, 641.

A SIMPLE METHOD OF BRONCHOGRAPHY IN CHILDREN

BY N. M. JACOBY, M.B., M.R.C.P. Lond.
REGISTRAR IN THE CHILDREN'S DEPARTMENT, GUY'S HOSPITAL; AND

G. KEATS, M.B. Lond., D.A.
RESIDENT ANÆSTHETIST IN THE HOSPITAL

BEFORE January, 1935, bronchography was undertaken only on the rarest occasions in the children's department of Guy's Hospital. Early in 1935, however, one of us (N. M. J.) did bronchographies on four children, using the method of passing a needle through the cricothyroid membrane under general anæsthesia. Although the results were satisfactory it was found that introducing a needle large enough to allow the flow of Lipiodol into the small trachea of a child was not free from the danger of infiltrating the neck with lipiodol. Later in the year one of us (G. K.) recognised that under deep general anæsthesia lipiodol introduced into the pharynx through the mouth must enter the trachea because the cough and swallowing reflexes are abolished, and the regular respiratory excursions facilitate its passage. The simplicity of this procedure led to its immediate trial, and the results obtained were eminently satisfactory. Since then bronchographies have been done by this method on 34 cases.

TECHNIQUE

The child is admitted to hospital and given a course of postural drainage for several days. He is then given 0·1 g. of Avertin per kg. body-weight, together with a hypodermic injection of 1/150 grain of atropine. Half an hour later he is lifted from bed on to a theatre trolley, and anæsthesia is induced with ether on an open mask. The induction is a slow one, and must be carried to the stage of full surgical anæsthesia with complete muscular relaxation and abolition of the pharyngeal and laryngeal reflexes. The average time required to reach this stage is ten minutes.

When anæsthesia has been induced, the mask is removed, a Doyen's gag is introduced, and the mouth is opened widely. The tongue is then pulled forward by a clip held in the operator's left hand and the child is slowly raised to a semi-sitting position and inclined to whichever side of the chest it is desired to fill. The lipiodol is introduced by means of a 20 c.cm. Record syringe with a firmly attached long curved cannula. The operator's right hand is free to hold the syringe. The oral cavity is illuminated by a small pocket torch held by an assistant. The cannula is introduced into the mouth until its point is just short of the posterior pharyngeal wall. The lipiodol is now injected and allowed to drip over the back of the tongue at the rate of about 2 c.cm. per minute. The only thing to be guarded against is the lipiodol collecting between the cheek and gums but this will not happen if the point of the cannula is kept close to the posterior pharyngeal wall. The amount of lipiodol used varies with the size of the child, but we never use less than 3 c.cm. or more than 8 c.cm. for each side.

When enough lipiodol has been injected the cannula is withdrawn and the child is kept in the semi-sitting position for about half a minute to allow the lipiodol still in the pharynx to enter the trachea. The child is then laid down either on his back, side, or face, depending upon which lobe it is desired to fill. In many cases he is laid consecutively in all positions so as to fill all parts of the lung. An interval of two to three minutes must be allowed to elapse between injecting the lipiodol and taking the plates. This allows time for the lipiodol to enter the smaller bronchial tubes. The child is now moved to the X ray table and the plates are taken.

DISCUSSION

The induction of general anæsthesia in children who already have pulmonary lesions may appear to be contra-indicated, but we believe this objection to be more theoretical than actual. In our series we have not met with any case that has shown deterioration of the pulmonary condition, and some of the children have had as many as three bronchographies done on them. Moreover we have not had any post-anæsthetic complications, nor have we ever been worried by the condition of the child under anæsthesia.

There may be certain rare occasions when it is undesirable to give a general anæsthetic, and we have had one such case.

This was a child with a congenital cyst of the lung which had become infected and developed a bronchial fistula. Not only was general anæsthesia undesirable, but owing to the fistula, adequate depth of anæsthesia was unobtainable. In this case we modified the technique as follows: The child was first tested for cocaine sensitivity by the hypodermic injection of ℥ 2 of a 1 in 1000 solution of cocaine. Avertin 0·1 g. per kg. body-weight was then given and half an hour later the larynx was sprayed with 1 c.cm. of a 5 per cent. cocaine solution. When the cough reflex was abolished the bronchography was performed as already described.

This method is not so simple as our general technique, and we feel that the routine use of cocaine is not desirable.

A point in favour of this method is that no coöperation is required from the child, and therefore there is no lower age-limit at which it can be performed. The youngest child that we have dealt with was 2½ years old, but we see no reason to expect difficulties in younger children.

The essentials of an *anæsthetic* for this procedure are :—

(1) It must be safe.

(2) It must not be unduly unpleasant to the child, as it may have to be repeated.

(3) It must not aggravate the pre-existing inflammatory condition of the air-passages.

(4) It must give the operator plenty of time for the injection and subsequent radiography.

For all these reasons a basal anæsthetic is indicated, and both paraldehyde and avertin have been tried. The latter is more reliable.

The choice of a subsequent inhalation anæsthetic presents certain difficulties. Nitrous oxide and oxygen is undoubtedly the best, but its use entails intratracheal intubation during the injection. This method has been tried, but is unsatisfactory because intubation can be extremely difficult in a young child and because the tube used is too small to allow the lipiodol to run in freely, so that a second tube has to be used through which to make the injection. This makes the method too complicated for general use.

Chloroform is less harmful to the air-passages than ether, but as the patient has to be manipulated considerably during the injection the danger of sudden collapse is too great to warrant its use. We have seen a patient collapse when sat up under chloroform anæsthesia, and have no desire to see this happen again.

We are thus left with ether. There are two objections to the use of ether in these cases. The first is the danger of explosion in the X ray room ; this can be overcome by anæsthetising patients in a separate room, in which case their exhalations are no longer explosive by the time the injection has been made and they are taken to the X ray room. The second objection, a much more potent one, is that ether may harm the already inflamed air-passages ; but, as has already been shown, if the anæsthetic be given slowly and carefully no harm will be done.

Post-operative care is important. The child has usually regained his reflexes by the time he is returned to bed. He must be turned on his side as vomiting is usual during the return to consciousness. The exhibition of 30 per cent. CO_2 in oxygen for short periods is most effective, for it induces deep breathing which moves the lipiodol in the air-passages and so produces coughing.

The difficulties encountered are few, but every now and again one meets a patient who persistently coughs, either under the avertin alone or at the first breath of ether. Such coughing is nearly always due to the presence of a large amount of secretion in the bronchial tree, in which case the cough is a productive one and the correct treatment is to return the patient to bed for further postural drainage and try again at a later date. If there is not much sputum it is justifiable to allow the spasm of coughing to subside and then induce with ethyl chloride, following on with ether once the cough reflex has been abolished.

SUMMARY

In children if lipiodol is introduced into the pharynx under general anæsthesia it must enter the trachea. In 34 cases this principle has been applied to bronchography, the children being anæsthetised with avertin and ether and the lipiodol injected into the pharynx through the mouth with a syringe and cannula. The method has been found to be satisfactory and free from danger.

EFFECT OF SYNTHETIC ŒSTROGENIC SUBSTANCES ON THE BODY-GROWTH AND ENDOCRINE ORGANS OF THE RAT

By R. L. Noble, M.D. Toronto, Ph.D. Lond.

LEVERHULME FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

(*From the Courtauld Institute of Biochemistry, Middlesex Hospital, London*)

It has been reported in this journal (Dodds, Lawson, and Noble 1938) that a substance, 4 : 4′-dihydroxy-α : β-diethylstilbene (diethylstilbœstrol), is capable of replacing in every way the action of œstrone or œstradiol, despite the fact that the molecular structure bears little resemblance to the naturally occurring substances. Unpublished work (Noble) has shown that this substance is capable of inhibiting the anterior pituitary gland in a manner similar to that of œstrone. The present communication is a preliminary report on the effect of this and other synthetic œstrogenic substances,[2-7] together with inactive controls, on the rate of growth and endocrine organs. It was thought that a practical method of inhibiting anterior-pituitary function would be of theoretical interest and also possible clinical significance.

METHODS

Synthetic substances representing different types of active compounds have been used in these experiments. For control experiments substances as closely related as possible, but devoid of œstrogenic activity in a dose of 100 mg. per ovariectomised rat, have been selected. Since various workers have postulated a relationship between œstrogenic and carcinogenic properties a number of more powerful carcinogenic hydrocarbons were also investigated. To obtain a prolonged but uniform rate of absorption, crystals of these substances were implanted into the subcutaneous tissue of the anterior abdominal wall, as in the method of tablet implantation described by Parkes (1938) and Deanesly and Parkes (1937). Doses of 10 or 100 mg. of crystals per rat have been used. The animals used were white Wistar rats and were weighed at regular intervals during the experiment. At autopsy the endocrine organs were dissected, fixed, and then weighed. The pituitary glands were weighed and then dried in acetone.

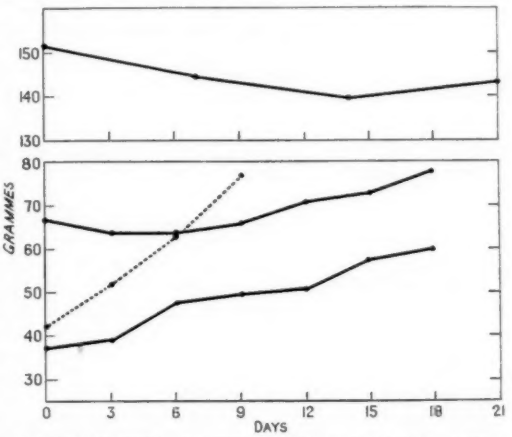
BODY-GROWTH

The prolonged administration of large doses of œstrone has been shown by Zondek (1936) to diminish the rate of growth in rats. It has been found that in some cases the implantation of synthetic substances has caused cessation of growth which continued for the duration of the experiment. This effect appears to be related to the œstrogenic activity of the substance, but also to the rate at which it is absorbed and excreted by the animal. In Table I the effect on body-growth exerted by some of these substances may be compared. Two substances, triphenylethylene and 4 : 4′-dihydroxy-γ-δ-diphenyl-β-δ-hexadiene (hexadiene substance), suppressed the growth of the animal completely for four weeks. Diethylstilbœstrol had an inhibiting effect for one week only. The discrepancy in action between the last two compounds may be explained by the fact that crystals of diethylstilbœstrol are rapidly dissolved in the animal, and the effect is a very transitory one. The use of tablets in this case would

presumably give a slower rate of absorption. Similarly, the difference in the effect on growth of triphenylethylene and the acenaphthene compound can probably be explained by variations in absorption of the crystals.

When crystals have been implanted into younger rats it has been found more difficult to inhibit growth. The accompanying Figure shows the effect of the hexadiene compound on groups of rats of three different weights. In the animals which received the crystals when weighing an average of 36·6 g. a slight but definite increase in weight took place. In a slightly heavier group no increase in weight took place for nine days, and then only very slowly. In the heaviest group the same dose of synthetic substance produced inhibition of body-growth. Collip, Selye, and Thomson (1933) reported that immature rats continued to grow even after hypophysectomy. From observations on more than 250 hypophysectomised immature rats it has been found that growth occurs in the majority of the animals and continues to approximately 75 g. Rats hypophysectomised above this weight never grow at all if the operation is complete. The fact that synthetic œstrogenic substances may prevent growth in a rat at an age when it would continue to grow even after hypophysectomy suggests that the substances may exert a direct growth-inhibiting action, other than inhibition of the growth hormone of the anterior pituitary (Zondek 1936). This question will be definitely settled by experiments in progress to determine whether crystal implantation in the immature hypophysectomised rat will inhibit the growth which normally occurs.

Two groups of 5 rats, each of which had received a sufficient dose of crystals to allow a very slow rate of body-growth, were injected with a potent preparation of growth hormone which was kindly supplied by Dr. F. G. Young of the National Institute for Medical Research. In the group of animals which averaged 72 g. in weight a slight increase of 5 g. over a control group was produced in one week. In another group of 5 rats which averaged 134 g. in weight at the start, and had received sufficient crystals to produce inhibition to growth, the administration of growth hormone only increased the rats' weight by an average of 2–3 g. over a control group in seven days. As the expected growth was from 10–15 g., it appears possible, therefore, to counteract the effect of growth hormone by crystal implantation. By using a synthetic substance which would allow of a slow but definite rate of growth it should be possible to increase growth quantitatively by growth-hormone preparations. Such a method could be used for assay and would be more readily available than that using hypophysectomised animals.



Effect of the hexadiene compound on the growth of three groups of rats of different weight (5 in each group). The interrupted line represents the average growth curve of the controls—i.e., 9 rats in which inactive crystals were implanted.

EFFECT ON OTHER ENDOCRINES

The effect of implantation of some synthetic substances on the weights of the endocrine organs one month after implantation may be seen in Tables II and III. Enlargement of the pituitary gland has been found in both male and female rats, but considerable variation has been seen. The largest pituitary glands were in general produced by the most active œstrogenic substances. Inhibition of the pituitary gonadotropic hormones, however, may occur in the absence of definite hypertrophy of the gland, as may be seen after triphenylethylene. An increase in weight of the adrenal glands was similarly found with the more active substances. Inhibition of the gonadotropic effects of the anterior pituitary was exhibited in the male by atrophy of the testes, with a resulting decrease in size of the prostate and seminal vesicles. In the female the effect on the ovary was more complicated, in that the œstrogenic substances may produce a direct stimulating effect on the corpora lutea, as was shown by Robson for œstrone in 1937.

TABLE I—THE EFFECT OF SYNTHETIC SUBSTANCES ON BODY-GROWTH

Substance.	Œstrogenic activity.*	Dose of crystals (mg.).	Body-weight (g.) at—†				
			Start.	7 days.	14 days.	21 days.	28 days.
9 : 10-dihydroxy-9 : 10-di-*cyclo*hexyl-9 : 10-dihydro-1 : 2 : 5 : 6-dibenzanthracene	Neg.	10	124·0	148·0	173·6	190·0	209·0
Dibenzyl	Neg.	100	152·0	173·0	194·0	212·3	232·3
9 : 10-dihydroxy-9 : 10-di-*cyclo*pentyl-9 : 10-dihydro-1 : 2 : 5 : 6-dibenzanthracene	1 mg.	10	125·3	145·0	166·6	189·6	209·6
9 : 10-dihydroxy-9 : 10-di-*n*-propyl-9 : 10-dihydro-1 : 2 : 5 : 6-dibenzanthracene	50 γ	10	118·6	123·0	130·0	137·6	149·0
4 : 4′-dihydroxy-α : β-diethylstilbene	0·3 γ	10	140·6	135·0	148·0	165·6	182·6
1 : 2-dihydroxy-1 : 2-di-α-naphthyl-acenaphthene	5 mg.	100	135·0	143·0	152·0	174·3	188·0
Triphenyl ethylene	5 mg.	100	133·3	134·6	135·0	133·3	139·0
4 : 4′dihydroxy-γ-δ-diphenyl-β-δ-hexadiene	0·4 γ	10	137·0	130·0	125·3	130·3	129·6

* Approximate dose producing vaginal œstrus in 50 per cent. of ovariectomised rats.
† Average weights for groups of 3 male rats.

TABLE II—EFFECT OF SYNTHETIC SUBSTANCES ON ENDOCRINE WEIGHTS OF MALE RATS

Substance.	Average weight (mg.) per 100 g. body-weight.*				
	Pituitary.	Adrenals.	Testes.	Seminal vesicles.	Prostate.
9:10-dihydroxy-9:10-di-*cyclo*hexyl-9:10-dihydro-1:2:5:6-dibenzanthracene	3·2	16·0	1229	295	248
Dibenzyl	3·7	14·0	1118	273	239
9:10-dihydroxy-9:10-di-*cyclo*pentyl-9:10-dihydro-1:2:5:6-dibenzanthracene	3·7	13·6	1268	201	226
9:10-dihydroxy-9:10-di-*n*-propyl-9:10-dihydro-1:2:5:6-dibenzanthracene	5·1	32·6	731	30	63
4:4′-dihydroxy-α:β-diethylstilbene	4·1	19·0	969	146	176
1:2-dihydroxy-1:2-di-α-naphthyl-acenaphthene	4·2	18·0	1395	142	184
Triphenyl ethylene	5·3	30·0	644	23	59
4:4′-dihydroxy-γ-δ-diphenyl-β-δ-hexadiene	11·3	41·0	393	26	57

* Average weights for groups of 3 male rats.

In some instances, therefore, the weight of the ovary was maintained by the presence of large corpora lutea, although the rest of the ovarian tissue had become atrophied through absence of the pituitary gonadotropic hormone. Over a prolonged period the corpora lutea appeared to atrophy and the size of the ovary became greatly reduced.

Suppression of the gonadotropic hormone was found to be more readily produced than the inhibiting effect on body-growth. In Table IV it will be seen that after insertion of diethylstilbœstrol crystals a group of 5 rats gained a considerable amount in body-weight, but the ovaries remained in the infantile state. A similarly treated group of 5 rats were each injected over five days with 20 mouse units of Physex Leo, a preparation of gonadotropic hormone from pregnancy urine. The ovarian response to this extract in rats which had received the crystal implantation was much greater than the effect usually produced by pregnancy urine extract, the weight of the ovaries, as may be seen from Table IV, being double that produced by the same dose of pregnancy urine extract in normal immature female rats. The explanation of this effect is at present obscure but may be related to a qualitative difference in the inhibiting effect on the individual hormones of the anterior pituitary.

The pituitary glands from the rats which received the synthetic crystals were removed at autopsy and dried after fixation in acetone. The glands were then extracted with saline adjusted to *p*H 8–9 NaOH, and an extract of 6 pituitary glands injected into one immature female rat. In Table V the gonadotropic effect of the extract may be seen. The pituitaries from the rats which had received the most active synthetic substances did not contain any gonadotropic hormone. It seems, therefore, that under these conditions synthetic œstrogenic substances may completely inhibit the formation of gonadotropic hormone by the anterior pituitary gland; they do not affect the liberation rather than the production, as stated by Zondek (1936).

TABLE IV—EFFECT OF PREGNANCY URINE EXTRACT ON OVARY

Dose per rat of diethylstilbœstrol (mg.).	Number of rats.	Weight (g.).		Weight of ovaries (mg.).
		Start.	23 days.	
10	5	40·6	93·0	15·8
10*	5	38·6	81·0	99·8
0†	5	40·2	—	53·0

* Injected 20 M.U. Physex over 5 days.
† Injected 20 M.U. Physex over 5 days.

CARCINOGENIC SUBSTANCES

In view of the findings by Haddow and Robinson (1937) and Haddow, Scott, and Scott (1937) that carcinogenic hydrocarbons may influence body-growth and tumour-growth in the rat, it was thought

TABLE III—EFFECT OF SYNTHETIC SUBSTANCES ON ENDOCRINE WEIGHT OF FEMALE RATS

Substance.	Average weight (mg.) per 100 g. body-weight.*			
	Pituitary.	Adrenals.	Ovaries.	Uterus.
9:10-dihydroxy-9:10-di-*cyclo*hexyl-9:10-dihydro-1:2:5:6-dibenzanthracene	5·2	27	35	231
Dibenzyl	5·6	26	34	297
9:10-dihydroxy-9:10-di-*cyclo*pentyl-9:10-dihydro-1:2:5:6-dibenzanthracene	5·3	29	36	403
9:10-dihydroxy-9:10-di-*n*-propyl-9:10-dihydro-1:2:5:6-dibenzanthracene	5·4	33	26	249
4:4′-dihydroxy-α:β-diethylstilbene	9·2	42	25	288
1:2-dihydroxy-1:2-di-α-naphthyl-acenaphthene	5·2	27	29	256
Triphenyl ethylene	7·2	47	26	442
4:4′-dihydroxy-γ-δ-diphenyl-β-δ-hexadiene	16·5	49	48	1179

* Average weights for groups of 3 female rats.

TABLE VI—EFFECT OF CARCINOGENIC SUBSTANCES ON BODY-GROWTH

Substance.	Dose (mg.).	Carcino-genicity.	Number of rats.	Average weight (g.)				
				Start.	7 days.	14 days.	21 days.	28 days.
Phenanthrene	10	−	5	159·2	182·4	202·6	220·8	234·4
Chrysene	10	−	5	163·0	183·0	192·8	206·2	216·4
1 : 2 : 5 : 6-dibenzanthracene ..	10	+	5	147·8	175·2	198·4	210·4	233·4
1 : 2-benzpyrene	10	+	5	130·0	154·0	172·6	186·4	212·3
Methylcholanthrene	10	+	5	145·8	159·0	164·6	177·8	191·2
Phenanthrene	50	−	3	46·6	72·6	105·0	135·3	159·0
1 : 2 : 5 : 6-dibenzanthracene ..	50	+	3	43·0	68·0	88·0	113·3	139·0
1 : 2-benzpyrene	50	+	3	40·3	64·0	91·3	112·3	131·0

of interest to see how rats would respond to crystal implantation of carcinogenic substances. Groups of 5 male rats received 10 mg. of crystals of methylcholanthrene 1 : 2 : 5 : 6-dibenzanthracene and 1 : 2-benzpyrene. In Table VI the effect of these substances may be compared with phenanthrene and chrysene as control substances. No definite effect on body-growth or endocrine weight could be demonstrated. It was thought that possibly the total dose was too small to be effective, and therefore a dose of 50 mg. per rat of 1 : 2-benzpyrene and 1 : 2 : 5 : 6-dibenzanthracene was implanted into two groups of 3 immature male rats. The growth curve of these animals is also shown in Table VI and shows only a slight difference from that of rats similarly treated with 50 mg. of phenanthrene. It is possible that these carcinogenic substances have such a low solubility that the effect from crystal implantation is too small to affect body-growth.

SUMMARY

After the subcutaneous implantation of crystals of synthetic œstrogenic substances in the prepubertal and adult rat the following effects have been demonstrated :—

(1) Inhibition of body-growth for a prolonged period in adult rats.

(2) Decreased rate of growth in rats at an age when growth is maintained even in the absence of the pituitary gland.

(3) Inhibition of gonadotropic activity, associated with an absence of gonadotropic hormone in the anterior pituitary.

Three carcinogenic hydrocarbons did not affect pituitary secretion or growth when tested by the methods described.

TABLE V—GONADOTROPIC HORMONE CONTENT OF PITUITARY GLANDS OF RATS WHICH HAD RECEIVED SYNTHETIC SUBSTANCES

Pituitaries from rats which had received—	Immature rat.		
	Weight (g.).	Ovaries (mg.).	Uterus (mg.).
Dibenzyl	45	56	45
9 : 10-dihydroxy-9 : 10-di-*cyclo*-pentyl-9 : 10-dihydro-1 : 2 : 5 : 6-dibenzanthracene	55	126	95
4 : 4′ - dihydroxy - α : β - diethyl-stilbene	50	82	101
Triphenyl ethylene	53	19	64
4 : 4′ - dihydroxy - γ - δ - diphenyl - β-δ-hexadiene	51	16	29

I wish to thank Prof. E. C. Dodds and Mr. W. Lawson for the generous supply of the synthetic substances used in these experiments, and for their interest and criticism.

REFERENCES

1. Collip, J. B., Selye, H., and Thomson, D. L. (1933) *Proc. Soc. exp. Biol., N.Y.* **30**, 544.
2. Cook, J. W., Dodds, E. C., Hewett, C. L., and Lawson, W. (1934) *Proc. roy. Soc.* B, **114**, 272.
3. — — and Lawson, W. (1936) *Ibid*, **121**, 133.
4. Deanesly, R., and Parkes, A. S. (1937) *Ibid*, **124**, 279.
5. Dodds, E. C., Golberg, L., Lawson, W., and Robinson, R. (1938a) *Nature, Lond.* **141**, 247.
6. — — — — (1938b) *Ibid*, **142**, 34.
7. — and Lawson, W. (1938) *Proc. roy. Soc.* B, **125**, 222.
8. — — and Noble, R. L. (1938) *Lancet*, **1**, 1389.
9. Haddow, A., and Robinson, A. M. (1937) *Proc. roy. Soc.* B, **122**, 442.
10. — Scott, G. M., and Scott, J. D. (1937) *Ibid*, p. 477.
11. Parkes, A. S. (1938) *Brit. med. J.* **1**, 371.
12. Robson, J. M. (1937) *J. Physiol.* **90**, 435.
13. Zondek, B. (1936) *Lancet*, **2**, 842.

VOMITING IN DIABETIC CHILDREN

BY WILFRID W. PAYNE, M.B. Lond.

BIOCHEMIST TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON

VOMITING in diabetic children is relatively common. Its causes are varied, and I will mention only the more frequent of them.

Acute infections such as measles, influenza, and otitis media often cause vomiting at their onset. Gastro-intestinal disturbances are seen in diabetics less often than in normal children, because their diet is more carefully regulated; but such attacks do happen. More serious abdominal conditions such as appendicitis must also be kept in mind.

The group of cases I propose to discuss here, however, is probably commoner than any of these, and certainly in my clinic it is the most dangerous. In a typical attack, abdominal pain with nausea or loss of appetite are the first symptoms, and later on there is vomiting, and perhaps headache. The child may be either flushed or pallid; the temperature is usually normal but may be slightly raised. After a few hours the condition may clear up and the appetite return, but often the vomiting persists and the progress now depends on the treatment. If nothing is done, and especially if no insulin is given, signs of ketosis develop, such as rapid respiration and drowsiness, and diabetic coma supervenes. This may happen within 24 hours, but usually takes longer. The abdominal symptoms may be negligible or it may be so intense as to suggest acute appendicitis. There is, however, no rigidity, and tenderness, if

present, is usually situated over the liver. Diarrhœa may sometimes be an important symptom, but in my experience such cases do not progress to coma.

It will be seen that the condition closely resembles recurrent or cyclical vomiting (often miscalled "acidosis" attacks, and popularly known as "bilious" attacks) which occur in non-diabetic children. Sometimes the exciting cause of the attack is apparent; a long bus journey, seeing an accident, or some other nervous shock, excitement at winning a prize or at going to the Zoo, and apprehension at starting at a new school, have all been exciting causes. In more than half the cases, however, no cause was obvious.

Most of the children in this group could not be kept sugar-free all day without causing unpleasant hypoglycæmic symptoms, and had therefore been allowed to pass fairly considerable amounts of sugar; in 3 children this loss was made greater by their having a low renal threshold. It was also noticeable that in many of these children the journey to the clinic caused sugar and acetone to appear in the urine at times when none was found at home. The parallel to the periodic vomiting in non-diabetic children, coupled with the daily loss of sugar, led me to treat these cases with a higher carbohydrate diet, and in two of them actually to add boiled sweets and jam to the diet. This was partially successful in one case only, the remainder being apparently unimproved as regards the frequency of the attacks, although two or three were improved in general well-being. Some other factors must therefore be involved. One of these was suggested by a very careful history given by a mother. The child normally passed sugar at certain times of the day; but when she became sugar-free all day she would get hypoglycæmic symptoms in the afternoon. The mother would at once lower the next dose of insulin, but by the next morning her breath would smell of acetone and her appetite would be lost, and then later vomiting would begin.

Looking back, I recalled other cases with a history of hypoglycæmia just before an attack, and subsequently in every case of vomiting not due to acute infections I have found either a history of nervous excitement or a history of preceding hypoglycæmia or at least of greater freedom from glycosuria.

EXPLANATION OF THE ATTACKS

A possible explanation of this sequence of events is as follows. The initial hypoglycæmia, as is now well recognised (Cope and Corkill 1934), stimulates the secretion of adrenaline, which presumably has the effect of liberating glucose from the liver and thus raising the blood-sugar. The adrenaline is secreted in sufficient amount to produce many of the well-known symptoms of insulin hypoglycæmia—e.g., tremor, vascular changes (flushing and pallor), and hot or cold sweats. It is therefore not improbable that in some more susceptible patients the action of the adrenaline on the alimentary tract will be apparent. Briefly this action consists in relaxation of the musculature and contraction of the sphincters. Thus the stomach is relaxed and the pylorus closed. Food in the stomach remains there, and if much is present nausea and vomiting may occur. Similarly the loss of tone of the small intestine allows pockets of gas to collect and distend the flaccid gut wall causing discomfort or actual pain.

It will be appreciated that any other effective stimulus to adrenaline over-secretion can give rise to similar effects, thus accounting for attacks produced by excitement or shock or by fever.

When the over-secretion of adrenaline ceases, these disturbances should disappear and the patient recovers from the attack without further complications. This often happens. If, however, the child's store of glycogen is low, a carbohydrate starvation now develops, since no food is being absorbed from the gut and all the available glycogen has been used up by the adrenaline. Fat unbalanced by carbohydrate must now be used, and this causes a production of ketone bodies and a lessened effectiveness of such insulin as is available (Himsworth 1934), leading to formation of ketone in still greater amounts. The increased ketonæmia will cause further vomiting. The condition now resembles that of untreated diabetes. There is ketosis and a high blood-sugar, due at first to adrenaline, and later to the reduced effectiveness of insulin. In the absence of treatment the patient may go into coma.

Since formulating this theory I have sought clinical evidence for the various steps. I have observed vomiting in asthmatic children, and nausea and abdominal pain in an adult asthmatic, after a big dose of adrenaline. One of my colleagues who was unfortunate enough to have a severe serum rash has informed me that after every dose of adrenaline he got nausea and then vomited. A diabetic girl who normally does not have attacks of vomiting has several times been given adrenaline to bring her round from a hypoglycæmia, and on each occasion she has vomited. Fright, a recognised cause of over-production of adrenaline is well known to bring about changes in the gastro-intestinal motility—e.g., "sick with fear."

Secondly there is some evidence of hepatic dysfunction with presumably poor storage of glycogen. Jaundice has been noticed in three cases. In at least three or four patients whom I have observed in these attacks, the liver has been tender and once actually enlarged; and in two patients who died in an attack there was extreme fatty degeneration. Again, with regard to acetonæmia accentuating vomiting in the later stage of the condition, nausea (and less frequently vomiting) has often been observed in children on the first day of a strict ketogenic diet, when there is the most rapid increase in acetonæmia.

Of the other common causes of vomiting already briefly noted, the commonest is the acute infections, and here a similar sequence of events may ensue terminating in coma. Increased adrenaline output occurs at the onset of such infections, and the course of events is probably the same as that following hypoglycæmia.

TREATMENT

The treatment is simple in the early stages. In the hypoglycæmic variety administration of sugar at the very commencement of the attack will abort it by raising the blood-sugar and stopping further secretion of adrenaline. If the condition has advanced beyond this stage, and adrenaline has brought about the rise in blood-sugar, it is sometimes sufficient to stimulate the stomach to function normally and such simple remedies as gentian and bicarbonate are often of value. If this is unsuccessful and nausea persists or vomiting occurs, it is necessary to give sugar together with insulin. An injection of 20–30 units of insulin is usually needed and the sugar should exceed 1 oz.; as long as it is in excess, the exact balancing of sugar with insulin does not matter. The sugar and insulin may be repeated at four-hourly intervals if necessary.

It is vitally important that sugar should be absorbed somehow. Even with some nausea and vomiting small repeated doses of dextrose solution by mouth, suitably flavoured, are partially absorbed; but if the vomiting is persistent the rectal or intravenous routes must be used. Most cases can be dealt with at home if treatment is started early. Removal to hospital will usually hasten the onset of coma and should therefore be avoided if possible; but if the vomiting becomes uncontrollable the patient cannot be dealt with at home and the quicker hospital treatment is started the better. The treatment of the later stages is that of diabetic coma and need not be dealt with here.

SUMMARY

Hypoglycæmia in children often causes abdominal pain and vomiting. In some cases this progresses to diabetic coma.

It is suggested that the cause of this in the first place is the secretion of adrenaline. Similarly the vomiting in acute febrile conditions may be due to increased adrenaline secretion.

The treatment in the early stage is to give sugar, but in the next stage extra insulin must be given as well as sugar.

REFERENCES

Cope, O., and Corkill, A. B. (1934) *J. Physiol.* **82**, 407.
Himsworth, H. P. (1934) *Ibid*, **81**, 29.

MEDICAL SOCIETIES

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY

AT a meeting of this society held on June 2nd Mr. RALPH BROOKE read a paper on

Rehabilitation of the Injured

The subject, he said, has had more attention abroad than in this country. In certain States of America medical commissioners have been appointed to decide compensation after injury. Where a worker is totally disabled he is given a lump sum in settlement of his claim and is then taught a new trade at one of the many rehabilitation clinics. But it is in the assessment of partial disability that the difficulties arise. In the United States tables of percentage are based on age and on loss of function—such as quickness of action, coördination of movements, strength, security, endurance, safety as a workman, and prestige of normal physique. Each of these factors is given a value, and all are assessed in arriving at the final percentage. Such a method, however, does not meet every case, and no means have yet been devised whereby partial disability may be satisfactorily standardised. In this country indeed we have never taken kindly to methods of standardisation in the granting of compensation, because the assessment is sometimes unfair to the workman; we have preferred to rely on the findings of the common-law court where he will usually have the benefit of the doubt.

The value of rehabilitation clinics, quite apart from the compensation aspect, cannot be denied. The surgeon is well aware that the patient, when discharged from the massage department of a hospital, is often in need of graduated light work before he can resume his ordinary manual labour. The employer is in difficulties because often he has no light work to offer; he may fear that a slow and inexpert workman will influence other workmen adversely. The workman is in difficulties because he feels that his weak limb will not be improved by the stress of work. He doubts the doctor's assurance that work is necessary to complete the cure. If he returns to work and falters he will lose his job; if he does not return, his claim to compensation, to which he is justly entitled, will be prejudiced.

The solution, said Mr. Brooke, lies in rehabilitation classes. It should be assumed for all practical purposes in every case that no light work is available, and the patient should have treatment at a rehabilitation clinic until he is fit to resume his ordinary occupation; or if this will never be possible, taught a new trade. Schemes of this kind are already in operation in Liverpool and Birmingham, and are not as hard to arrange as may be supposed. In a large town such as Brighton, for instance, the establishment of a rehabilitation centre would not offer insurmountable difficulties. Coöperation between all the important hospitals in the town or district would be essential, but this would offer no difficulty as far as the medical staff were concerned, for all are alive to the benefit obtainable. A rehabilitation centre accommodating 25 men would deal with 300 patients a year, corresponding to 1200 cases of injury. Patients could be drafted from all the hospitals to this centre, and if resident treatment is not undertaken—since most of the patients could go daily to the clinic much as they would go to light work—the staff would consist of a medical superintendent, a gym instructor, masseuses, one or more workshop foremen, and an employment and liaison officer, as well as servants. The cost of equipping such a centre, if the building and grounds were given, would be in the region of £5000 and the cost of maintenance about £2500 a year.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY

AT a meeting of this society Dr. IAN G. W. HILL read a paper on some aspects of

Thyrotoxicosis and the Results of Treatment

based on 283 cases of thyrotoxicosis treated in the Aberdeen Royal Infirmary. Among cardiovascular features 14 per cent. had auricular fibrillation; but Dr. Hill pointed out that this arrhythmia might be present without subjective disability and that neither long years of illness nor advancing age were necessary for its development. He found no correlation between the basal metabolic rate and either systolic or diastolic blood pressure. A raised systolic pressure was often found; 50 per cent. of the cases had systolic pressures of 150 mm. Hg or more, and 20 per cent. pressures of 170 mm. Hg or more after treatment, irrespective of its nature. Out of 205 cases 20 had diastolic pressures of over 95 mm. Hg, and Dr. Hill suggested that there might be an association between mild thyrotoxicosis and "essential" hypertension. Hypertension often persisted in the absence of other signs. There was no correlation between blood pressure and age in the goitre group. Referring to the difficulty of diagnosis between thyrotoxicosis and mitral stenosis Dr. Hill said he relied on the low-pitched diastolic murmur in the latter and on the auricular enlargement seen on radiological examination in the oblique position.

As to the results of treatment Dr. Hill said that

the total number of deaths in the 283 cases was 27. Discounting those in which death was unconnected with the thyroid condition the mortality for surgically treated cases was 6·9 per cent.; for cases treated by radium or X rays, 11·8 per cent.; and for those who received only general medical treatment, 18·6 per cent. Recently all the thyroid surgery had been in the hands of one surgeon and the mortality had fallen steadily. Radium had been practically given up in the last four years. Irradiation might be a stimulus sufficient to provoke in the severe case a crisis which might be fatal. More than half the cases treated by irradiation showed unsatisfactory results; but of 17 cases treated by radium fewer than half had received what is now deemed an effective dose, and of 39 cases treated by X rays only a third received an adequate dose, largely because the patients did not report for treatment. Of the group subjected to surgery 82 per cent. showed excellent or good, and 18 per cent. unsatisfactory results, while of those who received only general medical treatment 47 per cent. had excellent or good results. Dr. Hill said that deaths were more often due to injudicious timing of the operation than to accidents on the table. When the hyperthyroid patient was put to rest in bed the pulse-rate fell, and it fell again when iodine therapy was started; when this second fall was at the maximum operation was indicated. The most valuable guide was, however, the weight. If the patient's weight remained steady or was rising operation could be undertaken, but not, as a rule, if he was losing weight. The basal metabolic rate was unimportant in this connexion. It was unfair to resort to surgery only after medical treatment had failed, but an unforeseen rapid deterioration in patients apparently doing well on medical treatment suggested early operation. Surgical procedures such as tonsillectomy or other operations for the removal of septic foci were undertaken much too lightly. These carried risks as great as did thyroidectomy and required as careful pre-operative preparation. The after-treatment of all patients entailed long-continued and careful supervision by the family doctor, including a weekly record of weight.

REVIEWS AND NOTICES OF BOOKS

Arthritis, Fibrositis and Gout

By CHARLES W. BUCKLEY, M.D., F.R.C.P. Lond., Physician to the Devonshire Royal Hospital for Rheumatic Diseases, Buxton, and to the Buxton Clinic for Rheumatism. London: H. K. Lewis and Co. 1938. Pp. 153. 7*s.* 6*d.*

IN this short and authoritative book Dr. Buckley describes the essential features of rheumatoid and osteo-arthritis, chronic villous arthritis, spondylitis, fibrositis, and gout, and outlines the methods which he has found useful in their treatment. He maintains a nice balance between optimism and pessimism and confines himself to practical issues. The pros and cons of the gold treatment of rheumatoid arthritis with the danger signs to be looked for are clearly set forth; in the author's experience the best results are obtained from this form of treatment when it is combined with physiotherapy. Fibrositis, however mild, warrants a full investigation into the patient's constitution, habits, and diet, and should not be dismissed, with a bottle of salicylate of soda, as a "touch of rheumatism." Bee-venom has, he thinks, a larger place in the treatment of this condition than in that of rheumatoid arthritis. No mention is made of a time-honoured method of treating a gouty joint by swathing it in many layers of dry cotton-wool; this produces intense local sweating and often relieves the pain rapidly. The book is amply illustrated with radiograms. All practitioners have to cope with cases of chronic rheumatism and Dr. Buckley will certainly help them to do so with knowledge of the available resources.

Surgical Anatomy of the Head and Neck

By J. F. BARNHILL, M.D., F.A.C.S., LL.D., formerly Professor of Otolaryngology in the Indiana University School of Medicine. London: Baillière, Tindall and Cox. 1937. Pp. 921. 90*s.*

IF this seems a large volume, considering that it deals with the surgical anatomy of only a comparatively small part of the body, it is because exactly half the book is occupied by illustrations. The text seems to be a verbatim reproduction of the author's lectures on surgical anatomy, and its informal style is very refreshing after the stereotyped expressions found in many text-books of anatomy. The illustrations also have a character of their own, the foundation of most of them being a good black-board drawing which is much more realistic than the highly embellished productions often turned out by the modern medical artist.

The book reflects the author's special interest in the throat and nose, and the harassed student trying to master the intricacies of this difficult region will find his task greatly simplified by its study, especially by the pictures. Some minor errors have been overlooked in reading the proofs—for example, the incorrect labelling of Jacobson's nerve in Fig. 75, and the misprints for thyroglossal cyst and Graves's disease. There are a few misleading descriptions and drawings including the account of block dissection of the neck, and the pictures showing the internal jugular vein outside the carotid sheath (Fig. 4), and the descendens hypoglossi nerve inside it (Fig. 20). These are small defects in a volume which should be of considerable value to teachers as well as to students of anatomy and surgery.

Leukæmia and Allied Disorders

By CLAUDE E. FORKNER, A.M., M.D., Assistant Professor of Clinical Medicine, Cornell University Medical School. London: Macmillan and Co. 1938. Pp. 333. 21*s.*

THE great detectives of fiction, unravelling the intricacies of their latest murder, almost always at some time present their Watson with a neat summary of the relevant facts so far discovered. Dr. Forkner's concise account of the leukæmias reads like one of the best of such summaries. His book opens with an interesting historical survey followed by a somewhat dogmatic but extremely clear discussion of the classification of leukæmic processes and an analysis of our knowledge of ætiology, transmission, pathological physiology, and experimental production. Then comes a complete account of the manifestations of leukæmia in various organs of the body and a discussion of particular aspects of different types of leukæmia, including leukæmoid states. A final chapter is devoted to treatment.

Dr. Forkner defines leukæmia as "an invariably fatal systemic disease of unknown etiology, primarily involving the blood-forming organs and characterised by widespread, rapid and disorderly proliferation of the leucocytes and their precursors, and by the presence, almost without exception, at some time during the course of the disease, of immature leucocytes in the blood often in very large numbers." He adheres closely to topics strictly covered by such a definition and thus has little to say of the reticuloses in relation to monocytic leukæmia. His expressed dislike of the term "reticulosis" hardly justifies the dismissal as irrelevant of the large group of cases, whatever they are called, which have been recorded and analysed by Joan Ross and A. H. T. Robb-Smith among others. The great detectives of fiction are careful to give serious consideration even to what appear to be side issues, and Dr. Forkner in this one respect falls below standard.

His zeal and industry may be estimated by the fact that before completing his work he traced to their sources 5000 references, of which 1600 are quoted in his bibliography. His method of presentation of facts is throughout systematic and precise. It is amazing how many he has compressed into some 300 pages, which are illustrated, apart from the plates showing blood-cells, by excellent charts, photographs, and radiograms. This volume is the only complete and up-to-date review in the English language of the literature about leukæmia and as such will prove invaluable to clinicians, pathologists, and students. Dr. Forkner has not solved his mystery—the ætiology of the leukæmic process—but he deserves congratulations on having made a reasoned survey of the data relevant to the problem.

Introduction to Diseases of the Chest

By JAMES MAXWELL, M.D., F.R.C.P. Lond., Assistant Physician and Demonstrator of Practical Medicine, St. Bartholomew's Hospital; Physician, Royal Chest Hospital; Consulting Physician, Royal National Sanatorium, Bournemouth. London: Hodder and Stoughton Medical Publications. 1938. Pp. 328. 12*s*. 6*d*.

Dr. Maxwell starts this elementary text-book with the admission that the modern physician may be less expert than were his predecessors in eliciting physical signs and in drawing deductions therefrom. He wastes no space in regretting this natural outcome of the discovery that physical signs indicate at the most the site and probable nature of the disease and that few of them are pathognomonic. He is more concerned to show that by judicious use of the main supplementary methods of investigating diseases of the chest—examinations of the sputum, blood, and pleural fluid, and radiology of the chest—it is possible to achieve a precision in diagnosis which was entirely beyond the reach of the past generation. He emphasises, as is proper, the need to take a history "without prejudice" and explains how much may be learnt at the outset from discreet inquiry into the characteristics of major symptoms such as cough, sputum, hæmoptysis, pain, dyspnœa, and change in weight. He does not ignore minor symptoms nor the possibility that advanced chest disease, notably a bronchial carcinoma, may be present without disturbing the patient at all.

Instruction on the physical examination of the chest precedes the summary of the supplementary investigations; among these a particularly useful and well-illustrated chapter is that which sets out the principles on which the interpretation of radiograms is based. But the greater part of the book is devoted to the more common affections of the respiratory tract from the nose to the diaphragm. The system of classification—and the occasional tables—will appeal to anyone with a qualifying examination ahead of him. Dr. Maxwell's presentation is always clear-cut; occasionally he is perhaps over-dogmatic—for instance in the statement that in 10 per cent. of cases of carcinoma of the lung the sputum contains tubercle bacilli. Again, the view that the fœtor of lung abscess is always due to the presence of fusiform bacilli and spirilla is not held by all authorities.

The text is easy to read and the numerous radiograms have been well reproduced. In a future edition the plan of grouping the plates together in chronological order at the end of the book, rather than dispersing them through the text, deserves consideration; it certainly makes for convenient reference.

This book is intended primarily for the student, and he will get from it just what he wants—the basic facts about diseases of the chest unencumbered by academic discussion. Throughout its pages however there are hints, such as the note on the value of a lateral radiogram taken as a routine in cases of lung opacity of obscure causation, for which not only students but general physicians and practitioners may well be grateful.

Dextrose Therapy in Everyday Practice

By E. MARTIN, Sc.D. New York and London: Paul B. Hoeber, Harper Bros. (Medical Book Department). 1937. Pp. 451. 12*s*. 6*d*.

GLUCOSE is an old and well-tried food but its immense value had hardly been realised before the exact estimation of the sugar present in the blood became possible some 25 years ago. Still called grape-sugar (Traubenzucker) in Germany, the compound is more accurately labelled dextrose; natural grape juice provides a mixture of this and other saccharides. Dr. Martin has achieved the remarkable feat of collecting over 2000 references in medical literature to this one substance. These are of interest if only for the diversity of uses to which dextrose has been put.

Beginning with an account of the history of dextrose, its chemical nature and physiological actions, Dr. Martin proceeds to a detailed description of its more usual clinical applications. Here some overlapping is perhaps unavoidable. Most space is devoted to the use of dextrose in alimentary and metabolic disorders, including malnutrition, diseases of the liver, acidosis, and vomiting. An account of the value of dextrose as a diuretic given intravenously is included. The chapters on allergy, infectious diseases, and the use of dextrose in surgery are not critical enough. For instance, we read on the same page of gratifying results from hypertonic intravenous dextrose injections in conditions of hypertension as well as of hypotension. The final chapter on methods and modes of administration will seem almost tediously detailed to those well equipped in modern technique. It is certainly a convenience to know where to turn for information on every aspect of dextrose therapy even though the basis of some of it is a little shaky.

THE twelve addresses by Lord Horder which were published under the title of "Health and a Day" and reviewed in THE LANCET last year (1937, **2**, 195) have now been reissued by Messrs. Dent at 4*s*. 6*d*. as the second volume of their new Aldine Library.

MEDICINE AND THE LAW

Protection of Medical Witnesses

In a note on evidence of insanity in divorce proceedings last week (*Lancet*, July 16th, p. 150) Sir Laurence Brock was quoted as having referred to the high authority of a decision given by the House of Lords in 1905. This decision, important as a protection for the medical witness in other than matrimonial cases, is worth re-examination.

In 1901 a married woman named Mrs. M'Ewan, living in Scotland, wanted to obtain a separation from her husband on the ground of his alleged cruelty. She sent for the late Sir Patrick Watson, M.D., to obtain his testimony with regard to her broken-down condition which she contended was caused by her husband's ill-usage of her. She eventually brought an action of separation and aliment against her husband two years later. During the hearing of this action Sir Patrick and other doctors examined Mrs. M'Ewan on the husband's behalf. The examination took place on Oct. 21st and Sir Patrick reported the result to the husband's solicitors; he told them his opinion of the case and the nature of the evidence he was prepared to give; he also mentioned what he knew as the result of his previous examination of the wife in 1901 and he showed the husband and the husband's solicitor his private notes made at the time in 1901. On Oct. 24th, 1903, he was called as a witness for the husband. He then gave evidence of what he said he had learned when he visited Mrs. M'Ewan professionally in 1901. She was at that time pregnant. He produced his private note-book in which there was the following passage:—

> "Advised should be sent to a nursing home till after her confinement over, to wean her from morphia and separate her and her husband and also her family till after the birth of the child. This view not pleasing to patient nor to her father (who has married a second wife) and it seems they are all bent on inducing premature labour so as to free the patient of any permanent reminder of this marriage and if possible obtain a separation."

The Court of Session in Scotland decided against Mrs. M'Ewan, and it is perhaps not surprising that she felt aggrieved by the adverse disclosure in court of information obtained in 1901 by someone who was then attending her at her own request. She brought an action against Sir Patrick Watson on the ground that, in showing the notes to the solicitor, or in communicating the contents and voluntarily giving evidence, he had acted wrongfully and in breach of the duty of secrecy which he owed to her. Her feelings, she said, had been wounded and she had suffered loss and damage. She further complained that the doctor's notes were defamatory; they imputed to her a desire to procure criminal abortion. The issues in this case came up to the House of Lords where Lord Chancellor Halsbury delivered the principal judgment with characteristic vigour and common sense. The late Lord Haldane, then at the bar, had argued for Mrs. M'Ewan that a medical man, having received a fee for visiting his patient for the purposes of her own litigation, and having obtained information for her benefit, is not at liberty to disclose that information to the other side. The situation, counsel suggested, was the same as that of a solicitor who becomes aware of a flaw in his client's title; he is bound not to let the other side know of it. Lord Halsbury declined to give any ruling on this aspect of the confidential relationship between patient and medical man. "I do not propose," he said, "to express any opinion upon what would be the legal determination of that question if it arose." There was a much more simple ground on which the case could be decided—namely, what a witness says in the witness-box is absolutely privileged; and, further, whatever a prospective witness says to a litigant or to a litigant's legal advisers respecting the evidence he is likely to give in the witness-box is equally privileged. Witnesses, said Lord Halsbury, are immune; the only remedy against them is to indict them for perjury if they do not speak the truth. Mrs. M'Ewan's counsel had put forward for the first time in forensic history the argument that a witness is protected for his evidence in court but is not protected as regards his attendance in a solicitor's office when he is interviewed for the purpose of taking a proof of his evidence. Counsel could produce no authority to this effect. The privilege which surrounds the evidence actually given in court necessarily involves the same privilege for a statement made to a solicitor or to other persons engaged in the conduct of the litigation when they are told what evidence it is intended to give. Otherwise, continued the Lord Chancellor, it would be easy to sue a witness by saying "I do not bring this action for what you said in the witness-box, but for what you told the lawyers you were going to say." If that line of attack were possible, the privilege would be useless; no witness would come forward; witnesses would tell the solicitor "I shall say nothing; I may have an action brought against me if I do; so I am giving you no information at all." Giving evidence, Lord Halsbury repeated, must necessarily involve the preliminary examination of witnesses to find out what they can prove. In Sir Patrick Watson's case, he added, the communication complained of was no communication to strangers or to persons outside the litigation.

Conclusive and simple as this judicial exposition may appear, there still remains an uncomfortable feeling that Mrs. M'Ewan had a genuine grievance inasmuch as a professional man whom she had enlisted as an ally had decided to fight in the ranks of her enemies. He need not have supported her claim if he did not choose; but surely he need not have voluntarily assisted to checkmate it. On this side of the case Lord Halsbury had no misgivings. "I do not care," he said, "whether he is called a volunteer or not; if he is a person engaged in the administration of justice, on whichever side he is called, his duty is to tell the truth and the whole truth; if he does this duty, it matters not on which side he is called." There then is the lesson of M'Ewan *v.* Watson, to which Sir Laurence Brock referred last week. If the decision of the House of Lords is applied to the obtaining of evidence on the question of incurable insanity in divorce proceedings, it is clearly legitimate for Dr. A, who has attended Mrs. X, to tell the solicitors of her husband, Mr. X, whether in his opinion Mrs. X is or is not incurably insane. That is to say, the supreme judicial authority in the country has declared that from the legal point of view, the evidence of Dr. A in such a case is acceptable and that Dr. A is immune both when in the witness-box and during the prior process of telling the lawyers what evidence he is able and willing to give. And yet one comes back again to the position that, as a matter of professional tradition rather than of legal protection, circumstances can be imagined in which the medical profession would not unanimously approve the disclosure by Dr. A of his patient's confidences.

THE LANCET

LONDON: SATURDAY, JULY 23, 1938

REX v. BOURNE

WARMLY as we congratulate Mr. ALECK BOURNE upon his acquittal at the Old Bailey last Tuesday, we fancy he may share with us the paradoxical impression that a less satisfactory verdict would better have served the purpose of elucidating the law. Conviction would have meant a full examination of the problem in the Court of Criminal Appeal and possibly, with the concurrence of the Attorney-General, a final ruling delivered with the supreme authority of the House of Lords. Acquittal has left the legal position—except for two welcome passages in the judge's summing-up, to which we will presently refer—only a little less obscure than before. The jury's verdict may be hailed as a sample of public opinion. Doubtless its significance will not be underrated by the committee presided over by Mr. NORMAN BIRKETT, K.C., which is about to report its views upon the possible reform of the law of criminal abortion. Meanwhile, if similar facts are proved on a similar charge, a similar verdict will probably follow. There is no guarantee, however, that on similar facts there will not be a similar prosecution. When the verdict is "not guilty" there is no machinery by which the Director of Public Prosecutions can take the opinion of a higher tribunal upon some legal obscurity. The verdict of the jury does not amend the law. The all-important word "unlawfully" remains a forensic football. The Attorney-General kicked it in one direction by contending for the narrowest possible meaning; unless the surgeon operated with the sole object of saving the mother's life, he was guilty of criminal abortion. Operation in the interests merely of the mother's health was not enough. Between health and life, he assured the jury, there was a wide and easy distinction. On the other side Mr. ROLAND OLIVER, K.C., kicked the ball back again. He refused, like his client, to stand upon so narrow a ground. He claimed a discretionary right to operate in the interests of health as well as of life; therapeutic abortion was justified by "a reasonable apprehension of future trouble," and the surgeon need not even be positive that the trouble would certainly come. Faced with these two entirely different legal propositions, Mr. Justice MACNAGHTEN somehow found a middle way. The operation must be undertaken to preserve the life of the mother, as the Crown had contended; but the formula must be reasonably construed. After all, there was no great difference between life and health; "life depends on health, and it may be that, if health is gravely impaired, death results." Then came one of the two passages for which Mr. Justice MACNAGHTEN'S summing-up will be gratefully remembered: "If the doctor is of opinion on reasonable grounds and on adequate knowledge that the continuance of pregnancy would probably make the woman a physical or mental wreck, the act is lawful." The second passage was that which reaffirmed the principle that the burden is on the Crown to prove that the act was not done in good faith for the purpose of preserving the life of the mother.

In the past the uncertainty of the law has been made worse by the way in which the law has been administered. Learned judges have notoriously differed in their attitude towards prosecutions for criminal abortion. The late Mr. Justice MCCARDIE, for instance, seemed to use every effort to discountenance and discourage such prosecutions, whereas his colleagues showed no such inclination. Nor can it be said that the enforcement of the law has been satisfactory. The annual figures published by the Home Office indicate that there are fewer cases of criminal abortion than of murder. Such an inference, however solidly based on official records of prosecutions, must be fantastically untrue. This atmosphere of doubt and unreality has never been made clearer by judicial or statutory guidance. An incidental reference to pregnancies terminated to save the mother's life is to be found in the Infant Life Preservation Act of 1929; but the Act has no relevance to the case of R. *v.* Bourne, nor can a statute of 1929 do much to interpret a legal position which is very much older. The word "unlawfully" in the Act of 1861, under which Mr. BOURNE was prosecuted, is taken to mean (as we have seen) "not bona fide performed to preserve the mother's life." But where have the judges found this interpretation? No decided case contains it. This explanation of the word "unlawfully" must, we assume, be derived from the accepted standards of the best surgical practice as expounded in medico-legal discussions. Such standards may change in conformity with developments of scientific knowledge, professional technique, public opinion, or religious or ethical thought. But they remain, we may suggest, a matter on which the leading practitioners of medicine and surgery are entitled to be heard. An impressive array of professional opinion supported Mr. BOURNE at his trial. The law is rightly concerned to vindicate the sanctity of human life and to punish the destruction of the unwanted child. The justification of therapeutic abortion in a particular instance must be a matter of medical and surgical evidence. The result of the recent proceedings certainly gives no free hand to the professional abortionist. Nor should the registered medical practitioner be any the less careful than before to be fortified by a second opinion.

If the prosecution and acquittal of Mr. BOURNE have failed to clarify the law, what is the next step? Do we wait patiently while the medical profession gradually extends the field of therapeutic abortion by the process of appearance in the dock? Or will Parliament consider some formal

amendment of the Act of 1861? In the latter case will the amendment specifically exempt from prosecution the termination of a pregnancy due to rape where the patient is under 16—the age to which Parliament attaches special significance? Why should there be any age-limit? The latest Criminal Statistics record the fact that our criminal lunatic asylums contain six inmates whose offence was rape. The age of their victims is not specified, but would it be any more unlawful to procure miscarriage if the age were 26 instead of 16? Compulsory pregnancy for the victims of criminal assaults (provided, of course, that the facts are properly established) is an idea abhorrent to civilised society. The psychiatrist's point of view, admirably expressed in a letter from Dr. G. W. B. JAMES, printed on another page, is one which the man in the street can appreciate and endorse. Public attention having been concentrated upon the problem, early action may be hoped for. Meanwhile it is satisfactory to note the fairness of the recent trial. The police and the prosecution had their duty to do—to state and enforce the law as they understood it to be. They performed that duty without oppression or persecution. Mr. BOURNE had at his back the resources of the London and Counties Medical Protection Society. He was brilliantly defended by Mr. ROLAND OLIVER, who skilfully elicited from the court an early statement of what would be said to the jury in a most unusual case. If we still lack a perfect knowledge of an aspect of law which vitally affects medical and surgical practice, we can be grateful to Mr. ALECK BOURNE for an example of disinterested conduct in consonance with the high traditions of his profession.

THE INCIDENCE OF SYPHILIS

ON June 11th, in commenting on the Scandinavian report of Colonel L. W. HARRISON and his colleagues, we expressed a wish that some reliable system of notification would reveal the exact incidence of venereal diseases in this country. Our annotation was thought to challenge the substantial accuracy of the estimates reached by the Ministry of Health; that is to say, we seemed to imply that there is a great deal more syphilis in England than is believed in Whitehall. But if the official figures are in fact too low it is not because the Ministry have not taken pains to find out the truth, and their estimate can only be disputed by those who have good reason to disagree with some particular part of the argument on which it is based.

Briefly, the Ministry say it may be reckoned that more than 85 per cent. of the fresh syphilitic infections find their way to approved treatment centres and thus into the official returns.[1] This percentage is reached by discovering what proportion of the arsenobenzene compounds are sold for use outside the centres (about 15 per cent.) and confirmatory evidence is obtained (*a*) by inquiry among practitioners and medical officers of health; (*b*) by ascertaining what proportion of Wassermann tests under the venereal diseases scheme are done for private practitioners (about a twelfth). In further support of the conclusions thus formed it is pointed out that there is little evidence of resort to unqualified practitioners and that the rising proportion of patients found not to be suffering from venereal disease who are seen at the approved centres suggests increasing readiness to attend such centres. These are the main pieces of evidence advanced in the chief medical officer's report last year, and their cumulative effect is impressive, making it appear possible that even more than 85 per cent. of fresh cases reach the official books. Nevertheless there is still room for difference of opinion. It is suggested, for example, that the 15 per cent. of arsenobenzene used by private practitioners and unofficial institutions may cover more than 15 per cent. of the cases treated; for outside official clinics treatment is possibly rather sketchy. The reply to this is that private V.D. specialists often maintain treatment for longer than is done at a clinic; that the clinics themselves average less than one complete course per patient; that insurance practitioners have no inducement to treat V.D. patients and other practitioners are mostly ceasing to undertake such work; and that if a patient is inadequately treated he will sooner or later turn up at a treatment centre with secondary symptoms. Whether general practitioners are in fact treating venereal diseases, and whether their treatment is adequate, is largely a matter of opinion, though this opinion must be based on observation. It is arguable that many patients attend at the surgery only three or four times to receive injections, and that this suffices to prevent obvious and troublesome symptoms requiring further attention. It is arguable indeed that the early symptoms of syphilis are often so mild that the sufferers (especially if they are women) never go near a doctor at all. The Ministry's view is that 85 per cent. of the newly infected eventually pay at least one visit to the official centres, whereas the critics think that in areas where there are no such centres, or where the periods of medical attendance are restricted and inconvenient, a considerable amount of syphilis gets a little symptomatic treatment from the local doctor, or none at all. Is this proportion of cases really large or small? Does the apparent decline in congenital syphilis and in ascertained new infections prove the absence of any large body of untreated or under-treated disease in England? Or is there a good deal of venereal disease especially in the remoter countryside that goes unrecorded and without proper care?

At first sight the number of officially approved centres seems too small to secure the attendance of all infected persons. List 7 (May, 1936) shows only 188 for England and Wales, and of the 108 largest towns and boroughs, all with a population exceeding 50,000, 27 have none. But the aim is not so much to establish centres as to get people to go to them, and the reason why there is only one in Middlesex and none in Hertfordshire (to-

[1] Annual Report of Chief Medical Officer of the Ministry of Health for 1936.

take two striking instances) is that V.D. sufferers in such counties often find it easier to explain their visits to large London hospitals than to explain why they keep going to a town in their own neighbourhood. On the other hand only the more necessitous get their fares from the local county or municipal authorities, and no doubt there are some—less conscientious or more busy—who do not make even one journey. Naturally it would be interesting and valuable to know how many fish altogether escape the administrative net. We should agree, however, that to arrange a system of notification would be futile unless one could be reasonably sure of getting accurate returns from it.

STUDENTS ON THE CURRICULUM

EVERYONE would like to see the medical curriculum lightened; but since everyone wants to see more time given to the subjects that "really matter," the persisting tendency is towards addition rather than subtraction. No doubt by starting young and denying himself holidays, sports, hobbies, social activities, light reading, and travel the ordinary student is still able to go through the hoops set up by his enthusiastic elders; but he is becoming increasingly vocal in his complaints as he does so. The conference reported on another page, which was addressed by educational leaders as well as students, is a symptom of his unrest; but though it aired some serious grievances it produced no very clear conclusions beyond the agreement that the five years' course should on no account be lengthened. Much more definite proposals will be found in a report just prepared for the Association of Scientific Workers by a small group who are still taking or have recently taken their clinical training and "are likely," as they say, "to have a vivid experience of its advantages and disadvantages from the point of view of the learner." [1]

The writers are properly blunt, and they begin by saying that in some subjects, such as midwifery and anæsthetics, the regulations of the General Medical Council are not always complied with. Students do not always in fact deal with twenty normal deliveries before they qualify, and there is evidence that some are "signed up" for administration of anæsthetics without having ever actually induced anæsthesia. The reason for shortcomings in training is often a lack of material; but the committee point out that the regulations are supposed to represent a minimum. Another major criticism that arises from the difficulties of the medical schools and hospitals is that the teaching "rounds," including those that provide the early routine ward instruction, are often attended by as many as 30 or more students. The University Grants Committee have recommended the tutorial system, but the tutorial at its best—i.e., one or two pupils to a tutor—is seldom observed, and in some medical schools the classes are never less than 10. Passing from these general comments to consider the emphasis placed on the various subjects, the committee cover familiar ground in remarking on the interest shown by teachers in rare or obscure diseases, the waste of time in the operating theatre, and the relative neglect of such large realities as public health and psychoneuroses.

The remedies proposed are drastic—if indeed they can fairly be called remedies. The aim is to produce a general practitioner and he is to be produced (in a sense) in five years. But the five years are all to be devoted to clinical work—three years before graduation and two years (for those who intend to practise) after it, and the real total works out to eight years. Matriculating at 16, the student is to spend two years at school studying "amongst others, such subjects as physics, chemistry and biology." During this time he is to cultivate a scientific outlook—to the neglect, one may fear, of the humanities. After only one year devoted to anatomy and physiology, with the bias on their medical aspects, the five years' clinical study begins. Those who do not mean to practise may, as at present, receive an academic degree after three years at hospital, and may then begin to specialise in research or whatever interests them. But here we must interpolate that this way of spending the six years following matriculation would hardly be welcomed by anyone concerned with the proper preparation of the research worker. Prof. W. W. C. TOPLEY, F.R.S., has argued [2] that his success, except in the strictly clinical field, will depend more on his knowledge of the basic sciences than on his detailed knowledge of practical medicine or surgery; also that medical research is not an activity that can profitably be adopted as an alternative to practice at a late stage of a student's career.

To return to the proposals before us, the idea is that the clinician should have two post-graduate years—perhaps including six months' apprenticeship to a general practitioner. For future investigators and future practitioners alike, the teaching should refer wherever possible to the methods and results of research and should inculcate the principles of criticism. As to the means of such teaching, the tutorial method is deemed the best, with its free interplay of question and answer from both pupil and teacher, and this end is to be reached, if need be, by extending the registrar system (as was suggested in our leading article last week) and by giving students more chance to see the routine work of house-men.

The committee recognise that "examinations very largely condition the present curriculum as it is in practice." This statement is profoundly true, and gradual changes in the scope of examinations, within the framework of the General Medical Council's regulations, should allow progressive qualifying bodies to work reforms that may go far to realise the aspirations of the younger generation.

[1] The members are R. R. Bomford, B.M., R. W. Haynes, M.B., J. A. R. Miles, B.A., C. W. M. Whitty, B.A., and Miss J. A. Murray, M.B., and they have had advice from Mr. A. J. Watson, F.R.C.S. Report reprinted from the *Scientific Worker*, July–September, 1938. (Price 2d.)

[2] *Lancet*, 1936, 1, 43.

ANNOTATIONS

VITAMIN B IN LEPROSY

VARIOUS attempts have been made to demonstrate a relationship between the activity of leprosy and dietetic deficiencies. The vitamin-B complex has received most attention and there is some (admittedly uncertain) evidence that patients with nerve involvement are improved by its administration by mouth. In the last two years Badger and Patrick [1] at Honolulu have given dried brewers' yeast and synthetic B_1 concentrate by the mouth to a small number of lepers. The general course of the disease seemed to be unaltered after six months, and one child in particular developed an acute neuritis after having the synthetic concentrate regularly for eight months. When the vitamin was given by injection, however, their results were much more encouraging. Because of the good results which it has had in other forms of neuritis they used this form of treatment in cases of acute leprous neuritis. This is the one painful manifestation of leprosy and is characterised also by tenderness and swelling of the peripheral nerves. It may be mild or extremely severe, and may subside within a week or so or persist for several months, leaving atrophy, contractures, and loss of superficial sensation. In nine severe cases Badger and Patrick gave 300 international units of a synthetic vitamin B_1 daily intramuscularly and the same amount twice daily by mouth. Treatment was begun as soon as possible after the onset of the symptoms, usually on the first day. In all except one patient, in whom treatment had to be interrupted, the pain and tenderness disappeared and the swelling was much reduced within 3–4 days. A tenth patient had a very severe ulnar neuritis and was given 600 units daily intramuscularly. Here also the condition cleared up within 4 days. The duration of symptoms in cases treated by other methods in the past had been very much longer, usually 14–27 days, and one of the present patients had had a previous attack which lasted 24 days. Badger and Patrick are now using the method in alternate cases so as to control their results, and are also investigating the prophylactic value of similar injections given as a routine.

SMOKE, PLAIN AND COLOURED

THE National Smoke Abatement Society has expanded and reissued a treatise [2] first published in 1934 by the late Randolph Glen, a high authority on the law of local government. The repeal and replacement of our public health enactments in 1936 made a new edition desirable, and Mr. Hornby Steer, standing counsel to the society, has accurately revised the work. The relevant statutes are set out in an appendix together with specimens of by-laws. Parliament allows by-laws to regulate smoke of any prescribed colour, density, or content. Actually the by-laws deal with black smoke only, and in a foreword to this Sir Lawrence Chubb remarks that dense volumes of yellow, grey, green, or brown smoke, however inimical to health, go unpunished merely because their colour is not black. It is a defence against a charge of smoke nuisance to prove that the defendant used the best practicable means to prevent it. In deciding whether he used the best practicable means, the court (by a provision of recent origin) can take into account the question of cost and "local conditions and circumstances"—indefinite words provocative of long legal argument. The chimneys of the private dwelling-house, the worst offenders in atmospheric pollution, are immune from any statutory restriction, though proceedings are possible at common law. The inconvenient shortage of domestic helpers has at least encouraged gas and electricity in place of the coal fire; thus economic laws prove more valuable than the laws of Parliament. There is still far too much smoke in English air, especially in winter when sunlight is most wanted. The prospective regional committee of local authorities for Greater London will find plenty to do in the cause of smoke abatement. Mr. Hornby Steer expounds the legal position clearly for the local bodies which have to enforce the law and for the rest of us who are interested in ways of producing a cleaner atmosphere.

INFANTICIDE

Sir Francis Fremantle's timely letter on another page indicates a matter wherein administrative policy will surely supplement the work of Parliament. The legislature has made a change which the public conscience demanded. The Infanticide Act of 1922 eliminated the element of murder in cases where a mother caused the death of her "newly-born child" at a moment when she had not fully recovered from the effects of childbirth and when the balance of her mind was thereby disturbed. In a pathetic case at the Old Bailey, where a distraught mother had cut the throat of her three-week-old baby with a patent razor blade, the court held that a three-weeks infant was too old to be a newly born child. The authority of the Court of Criminal Appeal justified the decision. The mother's offence was murder. Either she must be sentenced to death or else she must be committed to Broadmoor as an insane criminal. Lord Dawson has succeeded in changing the law. The new Infanticide Act, which received the Royal Assent on June 23rd, repeals and replaces the Act of 1922. It omits the words "newly-born" and it substitutes a time-limit of twelve months. Incidentally it extends the benefit of the Act to mothers whose mind is unbalanced not only by reason of recent childbirth but also "by reason of the effect of lactation consequent upon the birth of the child."

This statutory amendment is valuable, but something more remains to be done. At the second reading of his Bill last March Lord Dawson urged that, in cases of this kind where the mother's conduct is obviously of the nature of illness and not of crime, she should not be remanded to prison but should be given bail; if bail could not be given, the remand should be to a home or hospital. On the Committee stage of the Bill in April, he spoke of the many letters which had reached him in support of this suggestion. No amendment of the Bill was actually moved for this purpose. Amendment indeed was unnecessary. The legal text-books state that it is not usual to grant bail in cases of murder. The statement is doubtless true; but there is no law which prevents the grant of bail except where the offence is treason. All that is necessary, therefore, is that magistrates should be reminded that they have the power to grant bail to a mother charged with infanticide and to attach, if they see fit, a condition as to her residence in a suitable hospital. It is this reminder which Sir Francis Fremantle hopes that the Home

[1] Badger, L. F., and Patrick, D. W., *Publ. Hlth Rep., Wash.* June 17th, 1938, p. 969.

[2] The Law of Smoke Nuisances. By W. R. Hornby Steer, LL.B., Recorder of South Molton, standing Counsel to the National Smoke Abatement Society. London: National Smoke Abatement Society. 1938. Pp. 65. 2*s*. 6*d*.

Office will see its way to issue. There have been indications that the authorities concerned with the administration of justice were inclined to deprecate the extension of the age-limit to twelve months in the new Act. They rightly bore in mind the interests of the children as well as the interests of the mothers, and it was feared that the extension might in practice be found to prevent the proper punishment of women who wilfully destroyed unwanted babies. This issue does not now arise since Parliament has definitely extended the age-limit. Since the statute law thus more fully recognises the medical aspects of infanticide, those who administer the law will not fail in sympathy and humanity.

ARACHNODACTYLY

THE familial and congenital syndrome associated with spider fingers, first described in 1896 by A. B. Marfan, consists in association of abnormally long and slender fingers and toes with decrease in the subcutaneous fat, generalised under-development of the musculature, and relaxation of ligaments. More than half of the 200 reported cases have also shown bilateral dislocation of the lens with a tremulous condition of the iris (iridodonesis) and contracture of the pupils, abnormalities of the heart, prominent ears, a high-arched palate, infantilism, kyphosis, scoliosis, and deformities of the sternum, thorax, and joints, especially those of the feet, with associated contractures. Futcher and Southworth [1] now report 2 more cases with associated intrathoracic disease, but without ectopia lentis.

The first was that of a boy aged 12 admitted to Johns Hopkins Hospital with acute rheumatism. His mother, an emigrant from the Ukraine, had died at the age of 37 from renal disease and was said to have had a hunchback, long fingers and toes, and normal eyesight. The patient had had long fingers and toes since birth and there was a history of chorea, two attacks of pneumonia, and recurrent otitis media. He had various skeletal deformities but his eyes were normal except for an error of refraction. He recovered from his acute rheumatism but was left with a heart lesion and he died a year later from myocardial failure.

The second patient was a German girl of 13. A maternal cousin had long mobile fingers and had had two attacks of rheumatic fever. The patient was so "double-jointed" that she could lay her thumb flat along her radius. She had dorsal scoliosis and a pigeon-breast, but her eyes were normal. Though acutely ill with pyopneumothorax on admission to hospital she recovered after rib-resection.

They point out that pneumonia and acute rheumatism are common in the subjects of arachnodactyly, whereas the better-known ophthalmological complications are found only in about half the cases and are not necessary for the diagnosis. Marfan,[2] in a paper published this year, amplifies his former observations and points out that arachnodactyly inadequately describes a condition in which undue lengthening and thinning is not limited to the bones of the fingers, but is also seen in the long bones; he prefers the more comprehensive term dolichostenomelia. The disease, he says, is not always congenital for A. W. Ormond described a boy of 4 in whom it appeared after pneumonia and F. J. Poynton has seen it arise in a child of nearly 14. Even in congenital cases the condition often attracts no attention till after the second year. The contractures of the tendons may be apparent rather than real; it may be that the tendons are of normal length or grow less rapidly than the bones of the fingers. The long flat feet are almost pathognomonic and the essential syndrome should be amended to include undue length and thinness of the limb bones, most conspicuous at their distal extremities. Other secondary deformities include dolicocephaly and a transverse depression of the cranium extending from ear to ear. Brachycephaly is rare, but some cases show plagiocephaly with frontal bossing, an abnormally long nose or a projecting chin. Amsler and others have suggested that the condition is due to an anomaly of development of germinal origin; but it is difficult to see why certain tissues of both mesodermal and ectodermal origin should be picked out. Again, the theory of a pituitary origin is not borne out by autopsy findings. It may be that dolichostenomelia is one manifestation of the more or less clearly defined status dysraphicus, but the evidence is so far inconclusive.

[1] Futcher, P. H., and Southworth, H., *Arch. intern. Med.* May, 1938, p. 693.
[2] Marfan, A. B., *Ann. Méd.* June, 1938, p. 5.

STAPHYLOCOCCAL TOXINS AND IMMUNITY

CLINICAL reports on the use of toxoid in staphylococcal infections have varied from enthusiasm to complete scepticism. Many authors report that clinical improvement does not follow the raising of the antihæmolysin titre which has been supposed to be the mechanism by which toxoid exerts its effect. In rabbits toxoid injections have been shown to produce an altered response to intradermal injections of staphylococci and toxin [1 2] and a degree of immunity to intravenous doses of staphylococci.[3] The degree of this immunity was correlated with the antihæmolysin titre. These results, as well as the trial of toxoid in man, are based on the use of the α-hæmolysin which lyses rabbit red cells. A β-hæmolysin, which lyses sheep red cells if they are left in the cold after incubation, is known to be antigenically distinct and found frequently in strains isolated from animals, but rarely in those isolated from man. Flaum [4] has been able by injections of α-lysin to produce immunity in rabbits to intravenous injections of staphylococci. He did not obtain as high titres of antihæmolysin as Smith did,[3] nor did he find correlation of the titre with immunity. Injections of a β-lysin led to a rise in anti-β-hæmolysins and to a degree of immunity to an α-toxigenic strain. His β-toxin gave hot-cold lysis of human as well as of sheep red cells and showed a leucocidic effect on rabbit leucocytes when tested by the Neisser-Wechsberg method. Flaum records studies of the bactericidal power of blood in rabbits and man, and of antihæmolysin titres and skin reactions in man. He concludes that immunity is not due to antihæmolysins and suggests that further study should be directed to leucocidins and antileucocidins, and to Petterson's negative chemotactic factor.[5]

Delaunay [2] concludes from a histological study of lesions in rabbits and guinea-pigs that the anti-hæmolysin produced by anatoxin (toxoid) injections does help to produce immunity, but that it acts partly by facilitating phagocytosis. Thus a failure of the cellular response accounts for the lack of success in some cases in which the antihæmolysin response is satisfactory.

It is evident that, as F. M. Burnet originally stated, the α-hæmolysin is not the only factor concerned in infection in rabbits. C. E. Dolman maintains

[1] Downie, A. W., *J. Path. Bact.* 1937, **44**, 573.
[2] Delaunay, A., De l'immunité antistaphylococcique, 1938, Paris.
[3] Smith, M. L., *J. Path. Bact.* 1937, **45**, 305.
[4] Flaum, A., *Acta path. microbiol. scand.* 1938, Suppl. XXXV.
[5] Petterson, A., *Z. ImmunForsch.* 1938, **91**, 366.

that it is of importance in human infections, though this has been denied by those who have obtained poor results with toxoid. It has been said [6] that the degenerations found in the kidneys, liver, and heart of patients dying in the first fortnight of a staphylococcal infection are similar to those produced in rabbits by lethal doses of toxin. The use of antitoxin, which is mainly antihæmolysin, in the treatment of severe toxæmia due to carbuncle and osteomyelitis has been credited with occasional success. It is possible that the antibody to the Panton-Valentine [7 8] leucocidin will prove to be that which chiefly influences resistance in human infections, or that some as yet unknown antibody is concerned.[9]

It seems certain that toxic filtrates or toxoid provoke a more satisfactory immunity in rabbits than do injections of staphylococci, but the identity of the important antigen or antigens is not yet determined beyond doubt. Attempts to prove the usefulness of toxoid in man are made difficult by the small proportion of cases of furunculosis which are really resistant to non-specific treatment and the great variations occurring naturally in the clinical course of deeper infections.

THE DOCTOR'S VIEW OF WAR

"By withholding service from the armed forces before and during war, by declining to examine and inoculate recruits, by refusing sanitary advice and the training and command of ambulances, clearing-stations, medical transport, and hospitals, the doctors could so cripple the efficiency of the staff and aggravate the difficulties of campaign and so damage the morale of the troops that war would become almost unthinkable. . . . In such refusal of service . . . there would be no inhumanity comparable with the inhumanity which medicine at present sanctions and prolongs. But let the dream pass and fantasy make room for facts."

In this resigned spirit Prof. J. A. Ryle, in a foreword to a symposium just issued,[10] reviews and dismisses the possibility of a combination of doctors to prevent war.

Nothing else in the book is so arresting. Doctors, like other men and women, are individuals, and as emerges year by year from the deliberations of the Representative Body of the B.M.A. (see p. 208) they form no solid body of political opinion except on the basis of a majority vote. Even in this short book the differing views of the eight contributors (whose names are mentioned but not in association with particular chapters) creep out through the integrity, well maintained, of a common purpose. Few of us need to be reminded that war runs counter to every principle of medicine, but sentences taken at random drive the lesson home afresh.

"British troops advancing to the relief of Kut drank water from a creek which ran through the Turkish lines to the British trenches. The creek was afterwards known as Cholera Creek."

"In one divison in France . . . the average lousiness was 20 lice per man, but in some cases as many as 300 were found."

". . . for every ten German military casualties one German civilian died of tuberculosis who would not have died but for the war."

". . . it was the merest accident . . . whether a man was labelled 'shell-shock' and sent to a hospital, or whether he had to face a court-martial and a firing squad for cowardice."

"Professor Frank . . . was able to establish the authenticity of twenty-six cases in which humans were killed and eaten by their murderers."

A layman might perhaps feel that arguments in favour of keeping the Red Cross inviolate are given more than due weight in this symposium. If civilians and children are to share the dangers of war it is hardly logical to maintain the standards of a lost chivalry in favour only of the wounded. Is it not unwise in any case, he might ask, to gild modern warfare with the noble traditions which trapped the young imagination in the past? Again, if the disease of war is grave, surely the more serious the attack the longer is the immunity to be hoped from it. Here the retort is easy. Unfortunately those who study the psychology of alternate generations have good reason to regard such immunity as an acquired characteristic that is certainly not inherited. An excellent section entitled Nature's Pruning Hook argues clearly that if there is a selective effect due to war in a nation it is probably dysgenic. It ends on a cosmic note with the reflection that the most optimistic view to take is that modern war will wreck the present structure of society without any permanent biological damage having been inflicted.

The conclusions embodied in the last section are moderate; none of the writers is a pure pacifist, and all see in the League of Nations the only available means of preventing war. They feel, moreover, that the profession is becoming gradually involved in the State machine and is in danger of becoming a helpless cog during wartime; they advise free discussion of this possibility among doctors. Finally they make a constructive suggestion—that the medical association of one of the great democratic countries should summon an international medical conference to discover the will of the profession, and to discuss the prophylaxis of war. We fear that conflicting loyalties would make it almost impossible for such a gathering to reach substantial agreement.

MYCOPATHOLOGIA

We have received the first two numbers of a new journal with this title which is devoted to the study of the higher bacteria. The editors are Dr. R. Ciferri, director of the botanical laboratory of the faculty of agriculture of the University of Florence, and Dr. P. Redaelli, director of the institute of pathological anatomy of the University of Pavia. The articles so far published cover a fairly wide range including such important subjects as allergy in monilia and yeast infections, and actinomycosis. The articles are in English, Italian, or French. Drs. Ciferri, Redaelli, and Visocchi contribute a synthetic review of the histoplasmaceæ family, and a similar review of the *Oidium albicans* (Robin) group records the examination of 15 different strains procured from all parts of the world with a discussion of their identification, landmarks, and nomenclature. Most readers will be surprised to learn that there are no less than 45 synonymous certain and 9 uncertain species in this group of mycotorula and that rough and smooth phase colonies are now being investigated. It might be questioned whether there is likely to be enough material for a monthly journal of this kind, but the systematic classification of these higher bacteria alone might well fill it for a very long time to come. The articles all reach a high standard of

[6] Stookey, P. F., Scarpellino, L. A., and Weaver, J. B., *Arch. Surg., Chicago*, 1936, **32**, 494.
[7] Panton, P. N., and Valentine, F. C. O., *Lancet*, 1932, **1**, 506.
[8] Valentine, *Ibid*, 1936, **1**, 526.
[9] Forssman, J., *Acta path. microbiol. scand.* 1938, **15**, 184.
[10] The Doctor's View of War. Edited by H. Joules M.D., M.R.C.P. With a foreword by Prof. John A. Ryle, M.A., F.R.C.P., Regius Professor of Physic in the University of Cambridge. (The contributors are Dr. R. R. Bomford, Dr. Mary T. Day, Dr. T. D. Day, Dr. P. A. Gorer, Dr. W. Howard Hughes, Dr. H. Joules, Dr. T. A. Ross, and Prof. W. H. Wynn, F.R.C.P.) London: George Allen and Unwin. 1938. Pp. 122. 3s. 6d.

workmanship, with good bibliographies. Judging from the first two numbers the journal is going to be of special value to dermatological departments which are concerned with skin parasites, their cultivation and classification.

AMMONIA FUMES

ONE of the girls involved in the accident last week in a South London ice-cream factory, when a cylinder of compressed ammonia exploded in the room where they were working, has since died. Autopsy showed extensive tracheo-bronchitis of the most intense form, on which broncho-pneumonia had supervened. In two other cases taken to the same hospital there was tracheo-bronchitis, less acute, but extending down to the air vesicles. This negatives the popular view that ammonia is so irrespirable as not to reach the air-passages owing to spasm of the glottis. It is nevertheless much safer as a refrigerant than methyl-chloride, small leaks of which may remain undetected until the gas has been inhaled with unpleasant results. Ammonia cannot be overlooked. Several of the girls also suffered from the strong ammonia solution produced by the condensation of water vapour in the air from the intense cooling due to the sudden expansion of the gas; the burns were of the first and second degree, some of the blisters being very large. Shock was an important factor in many of the cases which gave cause for anxiety during the first 48 hours.

TESTS FOR PRUSSIC ACID VAPOUR

HYDROGEN cyanide is used mainly in the fumigation of ships and buildings but may sometimes be met with in blast-furnaces, dye-works, gas-works, gold-mines, and elsewhere. Slight symptoms of poisoning may arise from as low a concentration as one part in 50,000 and one part in 500 may be fatal. The vapour may be absorbed through the skin, especially when this is wet, so that a respirator is not an efficient safeguard. The Department of Scientific and Industrial Research have issued a pamphlet[1] describing the standard method of detecting the presence of the vapour. This consists of drawing a sample of the suspected air by means of a hand-pump through a piece of test-paper impregnated with Congo red and silver nitrate or benzidine-copper acetate. The colours produced are compared with standards illustrated in the present pamphlet. The tests are capable of detecting concentrations down to one part in 100,000 and are intended to give a rapid indication of the safety of the atmosphere.

POST-GRADUATE SCHOOLS

THE year's activities of a sturdy infant of three or four cannot profitably be compared with those of an institution in robust middle age. It is the more gratifying that the number of students attending for long or short courses last year in the British Post-graduate Medical School attached to Hammersmith Hospital L.C.C. and the University of London approached closely the total of about 500 who worked at the New York Post-graduate Medical School and Hospital, associated with Columbia University. The reports of their progress in 1937 reached us almost simultaneously and are rather alike in format and in arrangement; that the latter is about double the size of the former is due to its content of hospital information consisting largely of lists of contributors to various funds and of nearly 1000 names of men and women working in some capacity on the hospital staff. If some of these lists are chiefly of local interest it should be added that the delightful photographs and perhaps even more charming line sketches of incidents of hospital life have a universal appeal. The British Postgraduate Medical School has only two portrait plates, beautifully reproduced, of men closely associated with the school who died during the year under review. It contains useful information of the work of the main departments, including typical weeks' programmes, and of the special lectures arranged (independently of refresher courses) which attracted in all over 7000 attendances. The detailed reports from the director of each department are well worth consulting by those who are not clear about the scope of instruction provided. It is noteworthy that though the school holds no special revision or coaching classes well over 100 of the students were in fact studying for higher examinations. It is clear that the general work provided is, as the dean, Colonel A. H. Proctor, notes, of a suitable standard for candidates working for these examinations.

[1] Hydrogen Cyanide Vapour. London: H.M. Stationery Office. 1938. Pp. 9. 5s. 6d.

A JOURNAL OF RHEUMATISM

OUR newest contemporary, the *British Journal of Rheumatism*, aims at covering the subject from the point of view both of the general practitioner and of the consultant whose specialty abuts on it. It will appear quarterly at first and will contain half a dozen abstracts by well-recognised authorities, a leading article, and reviews of books. The articles in the July number, after a send-off from Lord Horder and Dr. Fortescue Fox, are of the generally instructive rather than the original-research type, and are of a high standard. The journal is published by Baillière, Tindall and Cox and the subscription is 12*s*. 6*d*. a year.

THE death was announced on July 19th of Colonel C. H. H. HAROLD, M.D., director of water examination for the Metropolitan Water Board.

Mr. HUGH LETT, consulting surgeon to the London Hospital, has been elected president of the Royal College of Surgeons of England.

ON June 1st it was announced that responsibility for the emergency hospital and medical services had been transferred to the Ministry of Health from the air-raid precautions department of the Home Office. Dr. J. H. Hebb, director-general of medical services at the Ministry of Pensions, has been seconded to the Ministry of Health as principal medical officer in charge of these services. Dr. H. Lightstone will take Dr. Hebb's place at the Ministry of Pensions during his absence.

THE London County Council has decided that all expectant mothers in public assistance establishments under their control shall daily receive one pint of milk each and an apple or orange or Marmite in addition to the prescribed dietary.

INDEX TO "THE LANCET," VOL. I, 1938

THE Index and Title-page to Vol. I, 1938, which was completed with the issue of June 25th, is now in preparation. A copy will be sent gratis to subscribers on receipt of a post card addressed to the Manager of THE LANCET, 7, Adam-street, Adelphi, W.C.2. Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

SPECIAL ARTICLES

BRITISH MEDICAL ASSOCIATION

MEETING IN PLYMOUTH

PROCEEDINGS OF THE REPRESENTATIVE BODY

THE representative meeting opened in Plymouth on July 15th, under the chairmanship of Dr. H. G. DAIN. Sir FRANCIS FREMANTLE and Dr. HADEN GUEST were present at the invitation of the Council, and Sir Francis, as chairman of the Parliamentary Medical Committee, explained that, as medical M.P.s, they wished to be brought into closer relationship with the B.M.A. The Lord Mayor, Alderman S. STEPHENS, gave a civic welcome to the delegates in the Guildhall during the first session. Sir KAYE LE FLEMING (chairman of council) said that the work of the Council was always enlarging and it had been a very busy year for the British Medical Association.

Dr. THOMAS FRASER (Aberdeen) was elected president for 1939–40, Dr. Dain was re-elected chairman of the Representative Body, and Dr. P. MACDONALD (York) was elected deputy chairman.

Refugee Doctors

Dr. J. C. MATTHEWS, chairman of the organisation committee, in reply to Torquay (Dr. WARD), said that in 1937 40 non-nationals had been admitted to the medical register, 28 of whom had become members of the British Medical Association; in 1938 21 had been admitted to the register, none up to now having applied for membership. In the last five years 264 foreign doctors had been placed on the register, 191 of them having become members of the B.M.A.

Mr. N. BISHOP HARMAN (treasurer) spoke as one of a small body who had been summoned to confer with the Home Secretary. The position in Austria was lamentable; in fact the whole of Central Europe was in turmoil as far as Jewish doctors were concerned. Something must be done by civilised nations to meet the urgency of the situation. The medical representatives had advised that the maximum of Austrians admitted should be 50, and that they should not be placed on the register until they had taken a course of not less than two years in a medical school. They should be widely distributed, both before and after qualification, not grouped together in one or two places.

Dr. F. GRAY (Wandsworth) moved that the Council consider the effect on medical practice of the influx of medically qualified aliens, and urged that a searching inquiry should be made.—Sir KAYE LE FLEMING (chairman of council) said that any decision taken in this country would affect other countries such as Australia, South Africa, and New Zealand. There was a universal desire to relieve a distressing situation and also to do justice to their own profession. A medical committee consisting of Dr. Robert Hutchison (president of the Royal College of Physicians), Sir Cuthbert Wallace (president of the Royal College of Surgeons), Sir Girling Ball (dean, faculty of medicine, London University), Sir William Willcox, and Dr. G. C. Anderson had been appointed to assist the Home Secretary in considering individual applications.

Sir HENRY BRACKENBURY asked the Representative Body to convey to Scottish colleges their disapproval of allowing one year's study to be considered sufficient for foreign practitioners before taking the final examination.

Power of Expulsion

Dr. MATTHEWS proposed a motion to empower the Council to expel any member or associate whose conduct merited expulsion, without the proviso that the case should have been brought forward by a division or branch.

Dr. N. E. WATERFIELD (chairman of the ethical committee) explained that the alteration suggested in the articles of the Association would give power to the Council to initiate proceedings in an ethical case in which, for any reason, the division felt itself unable to do so. For instance, the eminence of a practitioner might make his colleagues chary of bringing an ethical complaint.—Dr. J. A. PRIDHAM (Dorset) said that branches were better able to take into account varying local conditions than the central ethical committee, and the proposed alteration would lead to autocracy and over-centralisation. What would happen if the division and the central body both wished to act?—Dr. MONA MACNAUGHTON (Newcastle) said they wanted to keep the branches alive and this would not be done by sending cases to London. If a member did something which his fellows did not approve, they were more likely to influence him within the Association than by expulsion.—Dr. T. CRAIG (Newcastle) said they had a great preference in Newcastle for managing their own affairs as far as possible. A man had a right to be tried by his peers and the local division had knowledge of the party concerned and of the circumstances. In many cases of young men who had offended he had found that merciful treatment had been successful.—Mr. BISHOP HARMAN emphasised the fact that there was no suggestion of taking away any power from the local divisions, and Dr. WATERFIELD said that a case taken up by the central committee would be at once reported to the division, which would be able to take over the conduct of the case if it so desired.

The motion was carried.

Chiropody

Dr. P. MACDONALD (chairman of the hospitals committee) moved the rescinding of a resolution passed by the Representative Body in 1934 refusing to give official recognition to chiropodists in a more extended field than that of dealing with corns and callosities. There had been a great increase in the demand for the service of chiropodists, due partly to blatant advertisement by chiropodists and bodies organising them, and partly to genuine need. Requests for service at out-patient departments of hospitals had been received not only from chiropodists and patients but also from doctors. Training of chiropodists varied between two weeks and two years, and hospitals ought to know what kind of people they were going to employ. A subcommittee had been set up by the Council to investigate the matter, and Dr. Macdonald had himself visited the Edinburgh foot clinic run by the Incorporated Society of Chiropodists, of which Sir John Fraser was the president. He had found that the society gave a two years' training and that students were rigorously instructed as to the limits of their practice. They were forbidden to advertise, or to use anæsthetics, manipulative or operative treatment. There were foot clinics in connexion with schools, with orthopædic surgeons on the staff, and the coöperation between hospitals and clinics was complete. The foot clinics were doing work which could not be

done by hospitals unless they had on their staff persons trained as chiropodists were. Dr. Macdonald was persuaded that it would be foolish not to accord recognition to people working in that way. Conditions at the London Foot Hospital were practically the same. The resolution had been passed by the Council in a full session by a large majority. They were fully alive to the difficulties; acceptance would mean departure in a small field from the principle that only persons with full medical training were capable of diagnosis, but they believed that the advantages to the medical profession would outweigh the disadvantages.

Dr. C. O. HAWTHORNE (London) said that the facts and conditions which determined the decision in 1934 remained substantially unchanged. The Council had presented an appealing report and he appreciated their frankness in stating that their decision had been guided not by principle but by expediency. The medical profession considered that the minimum training of those competent to recognise disease or to exclude its presence was the statutory medical curriculum. This standard had been adopted in dealing with other medical auxiliaries, and applications had not been granted without an undertaking to abstain from private practice and to give treatment only on the advice of a medical practitioner. Under the importunity of chiropodists it was proposed to cancel that principle. The chiropodist was not the only unqualified practitioner making this sort of claim: sight-testing opticians were in a similar category, but were not recognised by the medical profession. In the field of diagnosis the chiropodist was to be left free, but in therapeutics his sphere was to be limited. Dr. Hawthorne thought the chiropodist would soon think he had made a bad bargain for his two years' training, and would demand a larger liberty. He did not suggest interfering with advice and treatment given by chiropodists to patients who chose to go to them. He recognised the chiropodist as a man and a brother, but was not enthusiastic over his desire to become a brother-in-law. "Do not let us pretend," he said, "to recognise him for what he is not—a person trained and competent in the art of practical diagnosis."

Mr. H. S. SOUTTAR said chiropodists existed in large numbers and had made great advances in their work. Were we to allow them to grow up into a minor medical profession of their own, or to take the control now offered? Chiropodists had asked for recognition, and investigation had shown that the two well-accredited societies—the Incorporated Society of Chiropodists and the British Association of Chiropodists—were doing work of the first order and training students for a period of two years under strict medical supervision. Each candidate had to produce full notes of 500 cases before receiving qualification. The rules suggested by the Council were exactly those of these two societies. This was an opportunity to take control of an important minor branch of surgical practice; if this was not done it would take control of itself.

Dr. S. WAND (Birmingham) said that, while there was an alternative to the sight-testing optician in the ophthalmic surgeon, there was no alternative to the chiropodist, and Dr. A. BEAUCHAMP (Birmingham) could not imagine a person suffering from a corn going to a doctor for a letter of recommendation to a chiropodist. There was no evidence of harm having been done by trained chiropodists.—Mr. A. M. A. MOORE (Marylebone) said that, as an orthopædic surgeon, he had found the work of chiropodists of great value. We should go on needing chiropodists, and this was an ideal opportunity to gain control of their practice.

The motion as proposed by Dr. Macdonald was carried. In a subsequent motion dealing with the conditions to be required for the recognition of chiropodists, chiropody was defined as "the treatment of malformed nails and superficial excrescences occurring on the feet (such as corns, warts, callosities), and bunions."—Dr. J. W. BONE proposed an amendment to omit the words "and bunions," pointing out that a bunion was a hallux valgus and might lead to complications. He thought it dangerous to include bunions while the chiropodist was to work as an independent practitioner.—Prof. A. H. BURGESS (Cheadle) said that all chiropodists treated bunions, and he had seen them applying treatment by pads and strapping in a remarkably efficient manner. He thought it unreasonable to expect chiropodists to relinquish treatment of bunions. Dr. Macdonald agreed, and Dr. Bone's amendment was lost.

Payment of Hospital Staffs

Dr. MACDONALD said that the desirability of paying the medical staff was gaining recognition by an increasing number of hospitals, and this was a reiteration of the policy of the B.M.A. Hospital staffs should urge this upon their committees of management.—Dr. A. H. MACKLIN (Dundee) and Dr. E. R. C. WALKER (Aberdeen) both thought it would be invidious for members of hospital staffs to ask for payment for themselves when many hospitals were greatly in need of money for equipment and instruments. Any such suggestion would come better from a central body than from the staff.—Dr. MACDONALD said that shortage of money was a chronic state with hospitals and one on which they throve. The payment of medical staffs might create difficulties, but if the policy was right these difficulties should be faced and in time overcome.

Travelling Facilities for Hospital Patients

Dr. ERNEST WARD (Torquay) brought up the case of patients attending hospital for special treatment who were unable to make regular attendance because of the expense of the journey. He had approached the railway and bus transport companies, and had been told that it was too big a question to be dealt with locally. He therefore asked the Council to try to obtain facilities for patients so situated.—Mr. SOUTTAR said a system of this kind was universal in Scandinavian countries. In Sweden the Government provided travelling facilities for patients undergoing hospital treatment, and if the patient proved recalcitrant he was brought to hospital under arrest.—Dr. E. H. T. NASH (Public Health Services) reminded the meeting that, whereas railways in Sweden were controlled by Government, in this country they were run by private companies. It was, however, possible to obtain the sort of help required through public assistance authorities.

On the proposal of Dr. H. B. W. MORGAN (London) it was decided to make a recommendation to the Council that the matter should be referred to the joint committee of the B.M.A. and the Trades Union Council.

Anæsthetists

Prof. BURGESS (chairman of the consultants and specialists group) sponsored a motion expressing appreciation of the value of the specialist anæsthetist and recognising the right of the anæsthetist to assess and collect his own fees. He did not think assessment at a fixed percentage of the surgeon's fee a

workable plan: there must be a difference between the fee of the expert and of the beginner. Moreover, while the administration of an anæsthetic was a single act, the operation usually included visits and treatment before and after. The Association of Anæsthetists had approached the consultants and specialists group because they were dissatisfied both in the matter of fees and of status. They felt that the anæsthetist was regarded as little better than an assistant at an operation. This was largely their own fault, due to the way in which they collected their fees—through the surgeon, the general practitioner, or even the matron of a nursing-home. If the anæsthetist wished to be recognised as a principal, he must collect his fee direct from the patient.

Dr. A. B. MURRAY (Banff) agreed that anæsthetists should collect their own fees, but objected to the suggestion that there were no competent anæsthetists apart from teaching hospitals. If a patient required a surgeon, he brought his own anæsthetist, and the general practitioner, who might be very experienced in anæsthesia, was not given a chance.—Dr. R. SCOTT STEVENSON (London) said that anæsthesia had changed greatly in late years; they were no longer content with a bottle and a rag, and the present type of administration of anæsthetics demanded special training.—The motion was carried.

Contributory Schemes

Dr. MACDONALD said there was a growing belief that the activities of contributory schemes, especially in out-patient departments, were affecting private practice in a way that was not advantageous to anybody. About one-third of the contributory schemes in this country were without income limits, and in that case there was undoubted risk of encroachment.—Dr. H. A. NATHAN (Kensington) thought the position was acute, with consultants giving their services, and described the whole system as a malignant tumour spreading over general practice.—Dr. F. GRAY (Wandsworth) said the Hospital Saving Association was promoting out-patient departments to the detriment of private practice. People went to hospital for every complaint, and a feverish child suffering from measles might be kept half a day in an out-patient department. That was not the way to promote the best medical care of the community. Overcrowding of out-patient departments was leading to grave inefficiency in some cases.

Mr. MCADAM ECCLES (London) said the Hospital Saving Association was one of the original contributory schemes: it had been modified and was now in direct accordance with the scheme approved by the Representative Body. Patients should come to hospital with a note or voucher from their doctor saying that he wished advice or treatment to be given: patients arriving without a voucher should be sent back. Every voucher stated the income limit allowed.—Dr. MACDONALD considered that out-patient departments should be consultant departments, but the possibility of encroachment on private consultant practice should be borne in mind. Hospitals ought not to give services which could be obtained privately without undue inconvenience or financial strain. Membership of a contributory scheme did not carry the right of admission to hospital.

Resolutions referring the whole position of contributory schemes to the Council and urging them to resist the increase of income limits of the H.S.A. contributory scheme were carried.—A motion put forward by Dr. A. W. GARDNER (Brighton) to exclude from contributory schemes people whose income, though within the limit, was derived from invested capital, was lost by a large majority, after Dr. MACDONALD and Sir KAYE LE FLEMING had pointed out the impracticability of scrutinising the source of patients' incomes.

Publicity and Public Relations

The meeting then went into committee with Dr. R. G. GORDON in the chair. Speaking as chairman of the propaganda committee, Dr. H. G. DAIN explained the steps taken by the Council and the reasons for the Council's belief that the public is unduly ignorant of the work and views of the medical profession.

Dr. T. RUDDOCK-WEST (East Norfolk) moved that the representative body regrets the Council's action in launching the campaign without any preliminary discussions at the annual representative meeting or with local units of the Association. Dr. A. B. MURRAY (Banff) suggested that the Council had been dictatorial in thus launching their campaign; the procedure, he claimed, had been unconstitutional. Sir KAYE LE FLEMING, as chairman of Council, explained why the Council had regarded the initiation of its efforts as a matter of urgency in relation to the Government's health campaign, and Dr. Ruddock-West indicated that he did not wish to persist in his criticism. On being put to the meeting the amendment was lost by a large majority.

Dr. RUDDOCK-WEST then moved: "That the representative body deprecates the use of posters and press advertisements." Dr. DAIN pointed out that it would be futile to approve the objective—that of informing the public on medical matters—and at the same time to seek to restrict the methods which might be used. This amendment too was lost by a large majority.

Sobriety Tests for Motorists

A resolution by Dr. J. W. BONE (chairman of the medico-political committee) recommending an increase in the fees of doctors called by the police to decide whether a person in charge of a car was under the influence of drink met with considerable support. It was an important decision, Dr. Bone said, and the examination should be a careful one, demanding a good deal of time, and these were emergency calls occurring at any hour of the day or night. There was justification for raising the fee to £1 1*s.* during the day and £1 11*s.* 6*d.* for night calls.—Dr. H. P. LEHMANN (East Suffolk) was concerned to know where the fee was to be collected from. He had spent two hours in the road in the night on a police case and having decided that the man in question was not under the influence of drink, he was told by the police that they had no funds from which to pay. Unless the case was taken into court and costs were given against the motorist, the doctor received no fee. Dr. Bone said the watch committee was responsible for the doctor's fee, and if it was not forthcoming the matter should be reported to the local authority. If necessary the doctor should refuse his services to the police.

Medical Representation in Parliament

Dr. A. S. WIGFIELD (East Herts) introduced a motion to secure a more effective representation of medical opinion in Parliament. It was apparent to all that the Association did not always receive the amount of regard that it might reasonably expect.—Dr. HADEN GUEST said he would welcome the collaboration of doctors in Parliament not only in

matters of national health but elsewhere, because they took a scientific attitude towards public affairs in general. Medical questions asked on the floor of the House of Commons would be of benefit both to the country and to Parliament. A private notice question put to a Minister at the end of ordinary questions would gain publicity on any important subject and was a means of bringing pressure to bear on the Government. Merely to send polite letters to Members of Parliament would not produce much effect. There must be doctors in the House ready to say true and forcible things for the profession and the Association. There was a tendency in Parliament to neglect the opinion of the medical profession. An arrangement had been made for two members of the medical parliamentary committee, Sir Francis Fremantle, representing the Government, and himself, representing the Opposition, to meet the public relations officer of the B.M.A. every week.

Matrimonial Causes Act

The Council had expressed the opinion that "it would be unethical for a medical practitioner in medical charge of a patient of unsound mind to give to a declared prospective petitioner in a suit for divorce instituted against the patient information which he has obtained as the patient's medical adviser, and that such information should be given only to the guardian ad litem or other person responsible for the protection of the patient's interests."

Dr. N. E. WATERFIELD said that the Council had no wish whatever to obstruct the decision of Parliament that insanity should be accepted as a ground for divorce. It was the duty of a medical man to assist the legislature, but he must also respect the rights of his patient. It had been laid down by a declaration in the House of Lords in 1905 that, in the interests of justice, the parties in an action should have some indication beforehand of the evidence likely to be given, in order to know whether it was worth while to bring an action. This information was privileged and might be given to the accredited agent of the petitioner but not in the form of a certificate or formal return. The Council's view was that before the institution of divorce proceedings the spouse would be in close communication with the doctor in attendance on the insane partner, and so would be able to ascertain the likely evidence beforehand. When, however, the spouse became a declared prospective petitioner, the position was altered, and the information should only be given by a doctor to the person appointed to look after the interests of the patient, and communication with the person likely to be the petitioner should cease. Records of State-aided hospitals were the property of the local authority and the Ministry of Health. It had been decided, with the concurrence of the Ministry, that such records should be made available in cases tried under the Act. The responsibility for producing them would lie with the proprietor of the records, and in no case should the medical man produce them without permission from the authority to whom they belonged. (A statement that the Council was in discussion with the Board of Control and the medical committee of the House of Commons on the possibility of amending the present law was issued to the press.[1])

Dr. Waterfield paid a graceful tribute to Dr. Hawthorne, his predecessor as chairman of the ethical committee, who had decided not to seek re-election to the Council. Dr. Hawthorne could not be allowed to go without an expression of their affectionate regard (prolonged applause). Dr. Hawthorne replied that these experiences provided pleasant and grateful memories, and it was a welcome thought that colleagues who knew him well bore him feelings of goodwill. He thought it possible to contemplate the idea of temporary reappearance in future.

(*To be continued*)

[1] An announcement made by Sir Laurence Brock, chairman of the Board of Control, appeared in THE LANCET of July 16th, p. 150. See also p. 200 of this issue.—ED. L.

THE MEDICAL CURRICULUM

STUDENTS CONFER

LAST week a conference of a type new to this country was held in London; it was the first annual conference of the medical committee of the National Union of Students which was formed last year. To it came delegates from all parts of the British Isles and from nearly every university. By invitation also came deans, professors, and other teachers from many medical schools; for the subject of the conference was the Training of the Doctor.

Lord HORDER replied to the toast of The Profession at the dinner on the opening night and referred to the question many had raised, whether medical students ought to express an opinion on medical education. "Why not?" he asked. "I always did when I was a student." He added that he was entirely in favour of this kind of gathering, particularly among senior students. The same note ran through many of the addresses made at the conference. Sir Henry Brackenbury, in pointing out that the British Medical Association's proposals for a revised curriculum had been drawn up almost entirely by teachers of medicine, said that the views of those being taught were just as important as those of the teachers. Prof. W. W. Jameson was even more emphatic. He instanced how he always conferred with students at the London School of Hygiene and Tropical Medicine at the end of their diploma course, as a result of which the curriculum was modified nearly every year, and added that he considered discussions by medical students infinitely important. "Much will come of it. The people who are being taught are the people who know best how and what they ought to be taught."

AIMS AND APTITUDES

The subject was a wide one, and, though discussed against a background of the B.M.A.'s proposals and the General Medical Council's new regulations, together with a recently published report by the Association of Scientific Workers, ranged over a variety of questions. There was general approval of the necessity for a broad education for youths considering entering upon a medical career, because of the need for culture, a critical faculty, and an ability to think in a doctor. Opinions differed, however, as to whether there ought to be a special examination to ensure this; a Dublin delegate said that no special effort should be made, as such efforts always defeated their own ends. A point was made about the value of tutorial classes or seminars in developing a critical attitude towards his subject in a student, by discussing in groups points of interest or difficulty with one of the teaching staff. Such seminars are said to be successful in Edinburgh and elsewhere. Prof. C. Lovatt Evans, F.R.S., said he tried them once, but when he was unable to conduct them himself they degenerated into cramming courses.

Prof. Lovatt Evans spoke of certain aptitude tests that were being introduced in America, with a view to discovering whether an individual was likely to take well to medical study. The results, though difficult to obtain, were encouraging. Some such test would be a great help in deciding whether it was worth while spending an extra two and a half years at school before starting the preclinical course. Mr. Eric Pearce Gould pointed out that this period was apt to be wasted, if the candidate proved unsuitable in the end. An opinion was expressed that such aptitude, however it was gauged, should be the only criterion regulating entry into medical schools. Many would-be students were being kept out either by their lack of means, their sex, or their nationality, whose talents were thereby lost to the community.

THE "OVERCROWDED PROFESSION"

Mr. Pearce Gould and Prof. Lovatt Evans agreed that there was no unemployment at present among newly qualified doctors, in spite of their recent increase in numbers, largely as a result of the expansion of the national and public health services. The prospects for the near future were good, even with a moderate increase in the number of students qualifying each year, though what lay further ahead it was difficult to say.

At this point arose the thorny problem of whether foreigners, unable to practise in their own country, either for racial, political, or religious reasons, should be allowed to study for a degree in this country. Some pointed out that the science of medicine was international and that talent ought to be allowed to develop wherever it lay, while others regarded such arguments as mere sentimentality. It was resolved that the medical committee of N.U.S. should investigate the question, and in the event of there not being enough available positions for newly qualified British subjects to recommend the severe limitation of foreign entry. The suggestion that more scholarships and maintenance grants were needed to allow men of slender means to study met with considerable approval.

REARRANGEMENT OF STUDIES

About the curriculum itself all agreed that a period of five years was quite long enough—perhaps too long. And yet so great were the strides being made in medical science to-day, and so much greater than before were the demands being made by a doctor's patient on his consideration, that a rearrangement of the curriculum seemed to be the only way of including certain studies without lengthening its period. Not all doctors went into general practice, though three-quarters of them might. Prof. Lovatt Evans pointed out that the administrators and investigators also had to be trained. The latter required a long preclinical training ending in the taking of a science degree. There was, he said, relatively too much money available for research, since there was not enough to train people to do it. Moreover, to give every student as long a preclinical training as in the United States or Scandinavia would be to neglect the interests of the general practitioner, for whom it was not necessary.

The preclinical period could further be rearranged by regarding organic chemistry as part of biochemistry and pharmacology, and normal psychology as part of physiology. There were many who expressed opinions that much time was wasted in laboratories, particularly in having to dissect the entire cadaver. Others, again, were keen that the maximum possible amount of time saved by shortening the curriculum should be utilised in recreations and social activities. The most popular condemnation was that of the system of compulsory lectures, which found support from no one in the conference.

PREVENTIVE MEDICINE AND THE ART OF PRACTICE

One of the constructive suggestions that came before the conference was that of Prof. Jameson for a department of social and preventive medicine in each medical school. He pointed out that the subject had become neglected in the curriculum since it early became one for post-graduate study. When, in addition, it became divorced from venereology and tuberculosis, students lost interest in it. The result was that the whole of their training appeared to be fitting them to serve the sick rather than to preserve health. Each department of social and preventive medicine should be run by a young enthusiastic unprejudiced and specially trained man. It should be engaged in the study of normality, particularly among the student population. Each student should have a free health inspection at the beginning of his career and supervision from year to year. Students should study immunological reactions on one another. As well as epidemiology the effects of working conditions on the health of the people should be studied; also they should carry out research in such things as the discovery of early signs of disease; the whole atmosphere of the department should be one of health and active investigation, helping the work of all other departments. The Scottish and Welsh delegates were surprised to hear that it was not the rule in English universities to have a professor of public health.

There was much discussion of the present inadequacy of instruction in the art of practice. Mr. Pearce Gould pointed out that it was not just a question of knowing the ropes of panel practice. Many suggestions were made. The necessary background must be provided by understanding the circumstances and home life of the patient. This could not be learned in the wards of a teaching hospital. Study in out-patients, in the casualty department, in a visiting dispensary (as at Aberdeen), and in the wards of a municipal hospital were all valuable—the last particularly, since careful consideration always had to be given to the question of how a patient would fare at home, if he were discharged. Voluntary teaching hospitals, with much pressure on their bed space, always tended to get rid of their patients in the shortest possible time. It was a great pity that, for historical reasons, there should be a certain amount of tension in the relations between the teaching staff of many voluntary hospitals and the superintendents of the neighbouring municipal hospitals. Such relations were in many cases being improved, and students were more and more coming to be able to make use of the clinical material provided by municipal hospitals. Prof. Jameson emphasised that such advances as had been made in this direction must be continued. It was regrettable, however, that instruction in mental diseases was usually carried out in an asylum containing only hopeless cases. Instruction in psychiatry could only be of value in a clinic for psychoneuroses and mild psychoses, where treatment and its results could be seen.

Consideration was given to the possibility of holding a special appointment before graduating, along the lines of the B.M.A.'s scheme for a "final clinical period." A Durham delegate considered it impracticable for practitioners to take pupils at this stage, for they were too busy. An Edinburgh delegate

described a scheme for a course of instruction in the art of practice which was taken voluntarily at this stage by many students at his university. It appeared to work very satisfactorily.

The value of a period of responsible work as a resident in a hospital, preferably the one from which the student graduated, was generally recognised. It was regretted that it was not always possible for newly qualified men to apply for and receive these jobs, either for financial reasons or because there were too few available. An Edinburgh delegate described the efforts being made by residents there to obtain a modest degree of remuneration in addition to board and lodging. The conference sympathised with this effort and recorded its opinion that the affairs of qualified men holding resident appointments were very much the concern of the medical committee of N.U.S., and that any help which could be given them by the students' organisation in a case like this should be given.

EXAMINATIONS

The whole question of examinations was discussed thoroughly, both in general and in detail. The value of written papers as opposed to oral examinations was doubted by some; others recommended the use of "objective tests," while others again condemned these as spoon-feeding. It was generally agreed that the criterion for passing a student in, say, a physiology examination should be first, whether he has enough acquaintance with his subject to use it intelligently as a basis for clinical work, and secondly, whether he has that personality and common sense which go to make a reliable practitioner later.

What was described as a growing practice of limiting admission to the profession by ploughing larger numbers of students than usual in their final examinations, regardless of their previous records, was criticised by a student from Glasgow, where the number of failures has lately given rise to much heart-burning. The practice was roundly condemned. It results, so it is said, in a great increase in the number of examinees each six months; it causes widespread financial hardship, coming as it does at the end of a long and expensive course; and it leads to stagnation of university life and activity, through students becoming buried in their books trying to avoid a failure. For example, this delegate said that in Glasgow the medical students' journal had almost gone out of business, because no one had any time to think about writing for it.

PLANS OF THE STUDENTS' ORGANISATION

The medical committee of the National Union of Students has given itself much work for the coming year. It was unanimously resolved that meetings of students, especially those in their final year, should take place in each medical school, wherever possible, in order to discuss the curriculum with special reference to the situation in their own school; and that from such meetings representatives should go to meet the directors of studies and lay before them and discuss with them any proposals for reform which might have been made. Where possible, a permanent joint committee of students and staff should be established to consider such matters. It was recognised, however, that the authorities (and even the students) in some schools do not agree that students have any important contribution to make to discussion of their own education. In this connexion, as well as in its social activities (inter-school clinical visits, medical tours abroad, cinematograph library), the medical committee believes it can be useful to its affiliated organisations.

BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH

A MEETING of the trustees of the Beit Memorial Fellowships for Medical Research was held on July 13th for the election of fellows and other business. It was reported that F. R. Winton (1927–31) had been appointed to the professorship in pharmacology in the University of London at University College; G. R. Cameron (1930–33) to the professorship of morbid anatomy in the University of London at University College Hospital medical school; and A. R. Todd (1935–36) to the professorship of chemistry in the University of Manchester; and that R. J. Kellar (1935–37) had been appointed reader in obstetrics and gynæcology in the University of London at the British Postgraduate Medical School. The total number of fellowships held by full-time workers during the year 1937–38 was 23. The number of candidates at the present election was higher than usual. Five applied from Canada and three from Australia. Fortunately, reserve funds made it possible to award more junior fellowships than are ordinarily given each year, and the election of 12 new junior fellows brought the total of those elected since the beginning of the Trust in 1910 to exactly 200. A fresh edition has been printed this year of the green-book which summarises briefly the after-careers of the fellows and their present position in research.

The following elections to fellowships were made:—

SENIOR FELLOWSHIP

DAVID EZRA GREEN, M.Sc. New York, Ph.D. Camb. To continue his research on the rôle of vitamin B_1 in the oxidation of pyruvic acid, and to study a new flavin-protein compound in milk. At the institute of biochemistry, University of Cambridge.

FOURTH-YEAR FELLOWSHIP

MYER HEAD SALAMAN, M.D. Camb. To continue his research on vaccinia and animal pox viruses. At the Lister Institute of Preventive Medicine, London.

JUNIOR FELLOWSHIPS

GEOFFREY BOURNE, D.Sc. Western Australia. Director, department of experimental biology, Australian Institute of Anatomy, Canberra, 1935–36. Biochemist, Commonwealth Advisory Council on Nutrition, Sydney, 1937. Proposed research: the significance of vitamin C in the endocrine system. At the department of human anatomy, University of Oxford.

ANDREW LAWRENCE CHUTE, M.D. Toronto. Intern, Toronto General Hospital, 1935–36. Proposed research: experimental studies in metabolism of the brain. At the department of physiology, University College, University of London.

ROBERT OSWALD LENNARD CURRY, Ph.D. Durh. Commonwealth Fund fellow, 1935–37. Proposed research: the physiology of speech disorders by photographic study of laryngeal movements. At University College, University of London.

JAMES FREDERIC DANIELLI, Ph.D. Lond. Commonwealth Fund fellow, 1933. Since 1935 demonstrator in biochemistry and biophysics, University College, London. Proposed research: the permeability of normal and denervated muscle to metabolic products and to drugs. At the institute of biochemistry, University of Cambridge.

JOHN GEORGE DEWAN, M.D. Western Ontario. Assistant physician, Toronto Psychiatric Hospital, 1933–35. Since 1936 research worker at the institute of biochemistry, Cambridge. Proposed research: "insulin shock" treatment of schizophrenia by experimental studies of brain metabolism. At the institute of biochemistry, University of Cambridge.

CATHERINE OLDING HEBB, Ph.D. Dalhousie. Banting research fellow, 1934–37. Since 1937 research assistant

in the department of physiology, McGill University. Proposed research: the effect of thoracic sympathectomy on the activities of the lung. At the department of physiology, University of Edinburgh.

BERNHARD KATZ, M.D. Leipzig, Ph.D. Lond. Since 1935 research worker in biophysics at University College, London. Proposed research: electric excitation and transmission of impulses in nerve and muscle of animals. At the department of biophysics, University College, University of London.

JONAS HENRIK KELLGREN, M.B., M.R.C.P. Lond., F.R.C.S. Eng. Resident appointments, University College Hospital, London, 1935–36, and since 1937 research worker in its department of clinical research. Proposed research: painful conditions of the limbs and back. At the department of clinical research, University College Hospital, University of London.

JOHN JAMES DUNCAN KING, L.D.S. Eng., Ph.D. Sheff. House surgeon, Dundee Dental Hospital, 1931–32. Since 1936 research grantee of Medical Research Council. Proposed research: dental caries and parodontal disease. At the medical school, University of Sheffield.

HERMANN LEHMANN, M.D. Bâle, Ph.D. Camb. Research-worker, Physiological Institute, Heidelberg, 1934–36. Since 1936 research student of Christ's College, Cambridge. Proposed research: blood-sugar in animals, and iron metabolism in plants. At the institute of biochemistry, University of Cambridge.

WALTER JOHN O'CONNOR, M.B. Adelaide. David Murray scholar, 1934. Resident medical officer, Adelaide Hospital, 1936. Lecturer in human physiology and pharmacology, University of Adelaide, 1936–37. Proposed research: effect of strophanthin on the oxygen consumption of the heart. At the laboratory of pharmacology, University of Cambridge.

HAROLD SCARBOROUGH, M.B. Edin. Crichton research scholar, 1933. House physician, Royal Infirmary, Edinburgh. Since 1934 assistant in department of therapeutics, University of Edinburgh. Proposed research: mode of destruction of vitamin C in the human body. At the clinical and chemical laboratories, Royal Infirmary, Edinburgh.

All correspondence of fellows and candidates should be addressed to Prof. T. R. Elliott, F.R.S., hon. sec., Beit memorial fellowships, University College Hospital medical school, University-street, London, W.C.1.

NATIONAL HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM

ON July 19th Queen Mary opened a ten-storied building attached to this hospital. In briefly relating its history the Earl of Athlone, the president, said that in 1935 the Rockefeller Foundation had given £60,000 for building and £60,000 for research. Other sums had brought the total to £158,000.

The extension increases the beds by 43 and provides three new floors for research. The basement, ground and first floors are allocated to teaching and research, and on the ground floor there are also two private consulting-rooms where the physicians or surgeons on the honorary staff may see private patients without leaving the hospital. The teaching accommodation includes a large lecture theatre, a small practical class-room, and a refectory for students as well as a library, to the equipment and comfort of which old students of the hospital from Canada and the United States have contributed. In the numerous laboratories an attempt has been made to provide for future as well as present needs. To this end most of the benches have been so constructed that their height can be varied at will, and they can be taken to pieces and stored, or replaced by others of different sizes. The accessory services of gas, water, electricity, and compressed air are contained in boxes running round the walls or in a concealed panel in the centre of the floor. Screw sockets are set in the walls and ceilings to enable shelves to be easily put up and taken down, or apparatus to be suspended.

Above the laboratories are three floors of wards, each containing 16 beds. Two of these are for surgical cases and one is for cases admitted for special investigations. The wards are arranged in four-bedded rooms with a glass screen between them to facilitate supervision, and at the same time to retain the comfort of a small room. The next floor is devoted to the operation theatres and X ray diagnostic equipment, and single rooms for private surgical and psychological patients fill the upper floors. All the wards and rooms face south-west over the garden of Queen-square and their windows can be folded back to make them practically open-air wards. Waiting-rooms for patients' friends are provided on all the surgical floors.

The two operating theatres are served by a central sterilising room, the outer wall of which contains a panel filled by the doors and taps of the sterilising plant. The bulky parts of these project through the wall into a penthouse which can be reached by an outside balcony. On the roof of the building is a small animal house.

Throughout the building the corridors and doors have been made wide enough to allow beds to be moved easily from the wards to the dressing-rooms or the private rooms of the physicians and surgeons, a point of special importance in the care of paralysed patients.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

SURGICAL RESEARCH AT EDINBURGH

THE surgical research department of Edinburgh University has now been in existence for twelve years. On Wednesday the Minister of Health, Mr. Walter Elliot, starts a new phase in its history when he opens an extension. A new floor for laboratories and research rooms has been built and new apparatus for experimental research has been acquired. The operating theatres which were a feature of the original building have been refitted and now compare favourably with those of any modern hospital. It is an axiom of the department that all surgical intervention in animals must be carried out with the same care as is used in human surgery and the new theatres will do much to make this easier. A notable addition is a studio for medical art where the modern methods of the American school of illustration are to be employed. The importance of accurate records and graphic representation has been recognised and a trained staff using modern equipment should ensure that they are achieved.

Work already done by the department includes research of a fundamental nature into the cause of death in burns and in various types of intestinal obstruction. The mechanism of massive collapse of the lung has been studied and new light thrown on the relation of kidney disease to raised blood pressure. Of special interest has been the study of microscopical sections of whole organs, combined with a detailed study of the spread of disease by lymphatic routes. This method has already proved its worth in studies of cancer of the stomach and colon and in tuberculosis of the kidney. In all the investigations a close association has been maintained between the experimental investigations carried out and clinical problems as met with in the wards. It is through this close association of experimental work with clinical practice that the department aims at improving the standard of observation and surgical technique in the hospitals.

GRAINS AND SCRUPLES

Under this heading appear week by week the unfettered thoughts of doctors in various occupations. Each contributor is responsible for the section for a month; his name can be seen later in the half-yearly index

FROM AN AURAL SURGEON

IV

CONSULTATIONS vary very much in form and purpose. There is as a standard that of the general physician. A family doctor—I like that Scottish term better than the English general practitioner—has a case that puzzles him. It may be that he has narrowed his diagnosis within certain limits, but needs some help in the final decision between two or three lesions. It may be that he is faced with some weird and rare disorder that cannot come within the ken of one in general practice more than once within a life-time. It may be that he fears a patient whom he has known for years as one in perfect health except for minor ailments in developing some lethal complaint. He wants advice and guidance and the treatment is such as he can carry out or should supervise. In this type of consultation the well-being of the patient depends upon the liaison between the physician and the family doctor; and thus we get laid down the rules of medical etiquette enunciated by "Silver Doctor" (*Lancet*, 1938, **1**, 1079) that the consultant must never see the patient in his own home except with the family doctor; that if in his consulting-room the patient comes other than with an introduction from the same the consultant must seek out the latter and must write to him; and that except through him he must never reduce his fee. I suspect that the first is a golden rule. I can think of no exceptions to it. The other two cannot always be carried out in many forms of consultant work; not only in the surgical specialties—such as ophthalmology, orthopædics, or the throat and ear—but also in some of the medical ones such as dermatology.

* * *

Take, for instance, the leading K.C. with an important case next day before a mumbling judge. On the rising of the court he rings up an aurist of whom he has heard from a mutual friend to know whether he can empty his ears of wax before the day is out. The aurist stays in his consulting-room doing odds and ends pending his arrival; or tells him he will be free after dinner. On looking in the ear he finds the patient's diagnosis is confirmed. Is he to tell him that he can only treat him through his family doctor? He knows that he can put him in a state of efficiency for next day that the family doctor cannot guarantee. And when he has removed the conglomeration of wax and broken hairs is he to refuse a fee until he has written to the K.C.'s G.P.? Suppose he replies that he has not had a day's illness for twenty years and has no family doctor, are the two to manufacture one for the benefit of a medical tradition?

* * *

Take, again, the case of the Squire of Polznooks who catches the Cornish express up to Paddington on the day after he has had his ear syringed by the village doctor. He has gone stone deaf on that side and is rushing up to the specialist who has a bungalow on the beach near by his mansion. He finds this specialist is away at Polznooks and is referred to a colleague who removes a bit more wax and effects a wondrous cure. The Squire thinks it is a miracle but the specialist explains that it is the local doctor who has done most of the work, that he has but removed a small piece left behind which had become swollen by the water in the night and had thus occluded the passage so that no sound wave could get by. He adds that he would like to write to the practitioner to explain what had happened.

The Squire is aghast at this and will not have it at any price. The health of Polznooks depends upon the mutual confidence between him and the village doctor. They have worked together for thirty years. When the doctor feels at a loss he tells the Squire who pays for someone else to come in or uses his influence to get the patient into some hospital. To let the doctor feel he mistrusts him for a moment would be disloyal and would upset this arrangement. He has absolute confidence in him for all ordinary things. "But the ear is different. The ear is a delicate organ and if ever again I want anything done to it I shall come up to London to see you"—he never has, so presumably the wax has not re-collected—"But I won't have you write to my doctor. He thinks I have come up on business to see my solicitor." He does not give his doctor's name, and after he has gone must that aurist look up in the Medical Directory the village of Polznooks to see who practises there, and write to him to tell him he had left a bit of wax within the Squire's ear?

* * *

Not seldom the throat surgeon is called upon to act as referee upon opinions given by a family doctor and another consultant. There is, alas! a feeling abroad that the two may be in league with one another for their own financial profit. However much we may regret this we must face it. I have known of parents who have said they would never dream of submitting their child to operation on a single opinion especially when that has been given by the consultant who is to do it.

We may deplore such a mentality, but it is there. When such a family comes to you and you have said: "Yes! you let Mr. Smith take out little Ermyntrude's tonsils. They must be removed. I know him well, he will do the operation perfectly," are you also to insist, against the father's wish, in writing to Dr. Brown and telling him how you have supported him? Does not the principle of "Should a doctor tell?" apply in this instance too? Of course, if you take the responsibility of disagreeing with Dr. Brown and Mr. Smith you must also have the courage to say so to them. That is only courtesy; and probably the father will expect you to write to explain his refusal to take the advice that has been given him.

* * *

Then there is the little lady who has got your name from a physician to a great insurance company through her next door neighbour whose husband is a clerk in that office. She is an American and a sojourner in a strange land, where her husband is an agent for a Yankee company. Sometimes she does not follow your clipped cockney speech. She is 34 and has been married twelve years. She has no children and as she tells you this she adds that they are beginning to think of adopting. You

follow up this clue and learn that she has had two operations—one for appendicitis and another to remove a tube. She has been told that the reason she does not have a child is that her other tube is blocked. It has been suggested to her that another operation might be done to open this; but she gathers that the chances of success are not very great and she does not think she will have it done.

How often to-day do we hear of the selfishness of the young couples, especially American, who refrain from having children because they will not give up their pleasures? How often is there not an aching heart behind the story? Even the pleasures, so-called, when they are blatant, may be a mask to hide that ache even from themselves. In this case there was no evidence of blatant pleasures. They were just a young couple rapidly approaching the age when hope would be extinct, and were beginning to wonder whether they should adopt a child.

Rhinologically, she suffered from "catarrh"; but all her mucous membranes were quite normal. The consultation resolved itself into a talk on things in general in the course of which was brought out that there was nothing "serious" in her catarrh, that no operation would be needed, that it would never make her really ill, or shorten her life in any way. A suggestion that all the treatment needed was some preparation to allay the symptoms was met by a reply that she had one such already which suited her admirably.

She rose to go, and standing there I said "What about squaring up?"

"Oh! yes!" she said, looking up and opening her bag. "What is your fee?"

"Well, the usual West-end fee is three guineas."

"Oh!" she said again, but in a lower tone, and her bag shut with a snap as she looked down and went on.

"Then I am afraid I must send you a cheque."

"What did you think it was going to be?" I asked.

She looked up again and answered that she had thought it would be two. Now was I wrong not to extort that third guinea out of her because of the rules of the game? I had already noticed that the stuff of which her blue coat was made was but a cheap one. We all think Americans reap princely salaries, but clerks in our insurance offices do not and she had one as her next door neighbour. There are those who say: "She would think the more of you for it." But the important thing is not what she would consciously think of me; but whether subconsciously what I had said would help her. When one is living on an income at which one does not have to count the odd pounds, it is possible that one may purchase consultations as one does cabbages and carpets, thinking that the most expensive must be the best. But when one has to think of every shilling, it takes a bit of thinking to put two guineas in one's bag; and probably that gives all the psychological advantage that there is to be had out of a big fee, if any. To be made to pay a third may leave the patient disgruntled and undo the benefit that should have accrued. To have to find a doctor and go through the form of writing letters to and fro before the lesser fee is accepted is to introduce into private practice that very red tape of officialdom from which it should be free.

* * *

There is much room for consultations of this sort, and even guineas "pay" when mixed with twos and threes. The deafnesses, and the noises in the head, can only be dealt with in the consulting-room where time is not a factor, and where the personal touch is not destroyed by the presence of other patients, of nurses, and of students or of doctors. It is better every time for such a patient to be seen in private rather than at hospital. This is where the value of the H.S.A. and B.M.A. scheme comes in. It does away with the great Harley-street specialist graciously "reducing his fee" at the request of his old fellow student who practises at Balstead or Higham. It enables us who never have wanted to charge three guineas to the man with the small income or to the woman in the little house to say "No! I am not reducing my fee. That is my fee for one in your position."

PANEL AND CONTRACT PRACTICE

An Apology for Insurance Committees

IT may not be generally realised that insurance committees formed no part of the national health insurance scheme as it was introduced into Parliament. They were added to concede one of the famous six cardinal points of the British Medical Association—i.e., that medical benefit should be administered, not (as originally proposed) by the approved societies, but by a new body on which the medical profession would be represented. It was at first contemplated that the insurance committees would be reinforced by district committees, and would form a new and important part of our system of local government. No such development has, however, taken place. On the contrary, the discontinuance of sanatorium benefit in 1921 considerably diminished the insurance committees' duties, which according to the Royal Commission on National Health Insurance "are now of a routine character and could equally well be performed by the same officials working under the control of the local authority." The Commission recommended that the insurance committees should be abolished and their work handed over to committees of the local authorities, and this step was recommended also by the Departmental Committee on Scottish Health Services. But though the Commission's recommendation was made twelve years ago nothing has been done to give effect to it. The insurance committees are still very much alive and show no signs of moving towards extinction.

They are in fact prepared to put up a good fight for their lives. There is evidence of this in an address given by Mr. T. J. Addly, chairman of the Edinburgh insurance committee, at the recent annual meeting of the committee.[1] Mr. Addly pointed out that at the inception of medical benefit twenty-five years ago the insurance committees had to contend against exceptional difficulties, which had been successfully overcome; that the atmosphere of criticism in which the medical service began to work had been cleared away; and that the committees had formed an agency through which representatives of the approved societies and the medical profession "were coöperating in a most cordial fashion with a single-minded purpose—the welfare of the insured population." The committees had now accumulated twenty-five years' experience of health insurance

[1] Reported in the *National Insurance Gazette* of June 23rd, 1938.

administration and have developed an administrative technique which was working smoothly and successfully. Nor had they, Mr. Addly claimed, been satisfied merely to carry out their routine duties. They had pressed, and with success, for the reinstatement in medical benefit of persons who had lost the right to it through long-continued unemployment. In Edinburgh 1543 persons out of the 1843 who had been suspended from medical benefit were by this concession reinstated in benefit. In the whole of Scotland the corresponding figures were 30,000 and 34,000. He pointed out also that the committees have long been advocating the extension of the range of insurance medical services and the inclusion in medical benefit of the dependants of insured persons, and he claims that the insurance committees, with their long experience of insurance administration, are the proper bodies to administer such an extended service. The considerations put forward by Mr. Addly in his interesting address will doubtless be taken into account when the time comes to make the extensions he contemplates.

CORRESPONDENCE

TESTIMONIAL TO DR. HUTCHISON

To the Editor of THE LANCET

SIR,—The election of Dr. Robert Hutchison to the presidency of the Royal College of Physicians has given the greatest pleasure to a very wide circle of friends to whom Robert Hutchison has stood for all that is sound in the practice of medicine and all that is good in tradition. We feel that this occasion provides the opportunity of showing our esteem to him personally and acknowledging in some degree his fine contribution to medicine.

It is proposed to commemorate the occasion by presenting Dr. Hutchison with his portrait and with this purpose in view we venture to make known the project to old students, friends, and societies in London, Edinburgh, and the provinces.

Personal donations should not exceed three guineas. Cheques should be sent to the manager, National Provincial Bank, 10, Marylebone High-street, London, W.1, for the credit of the Robert Hutchison Testimonial Fund.

We are, Sir, yours faithfully,

LANCELOT BARRINGTON-WARD, HUBERT BOND, EDWIN BRAMWELL, DAWSON OF PENN, DUNCAN C. L. FITZWILLIAMS, FRANCIS FRASER, R. S. FREW (Hon. Treas.), WILLIAM GOSCHEN, F. J. MCCANN, MACMILLAN, ARTHUR MACNALTY, FREDERICK KAY MENZIES, GEORGE NEWMAN, GEORGE RIDDOCH, HUMPHRY ROLLESTON, BERTRAM SHIRES, FREDERICK STILL, G. A. SUTHERLAND, JAMES TAYLOR, JAMES WALTON, DAVID WILKIE.

July, 1938.

ARTIFICIAL ABORTION FOLLOWING RAPE

To the Editor of THE LANCET

SIR,—The admirable summary appearing in THE LANCET of July 9th, of the case in which artificial abortion following rape led to police-court proceedings against a valued colleague and friend, prompts me to write to call attention to the mental aspect of the case in question. May I be permitted to restate the case from the psychiatrist's point of view?

A young girl, under the age of consent, is violently assaulted and raped by a number of adult males. As a result she becomes pregnant, at an age at which both law and medicine believe her to be physiologically immature and unfit to bear a full-time child. The circumstances of the assault in themselves constitute a vividly terrifying experience which might well precipitate mental symptoms. If the pregnancy had been allowed to continue, the young girl would have been submitted to the mental stresses imposed by a compulsory pregnancy with its daily, even hourly, reminders of the assault perpetrated upon her person. After nine months would come the further physiological stress of a difficult labour, giving her a child to nurture whose father she can never know. My own opinion, which I believe to be supported by expert colleagues, is that the resulting mental strains would be likely to endanger the sanity of an immature adolescent girl, and that on mental grounds alone the abortion was justifiable.

No responsible doctor wishes any unwise or hasty modification of the law regarding abortion. But few mental experts will have escaped either the necessity for giving an opinion on the question of therapeutic abortion for mental reasons, or the uncomfortable feeling that to advise abortion is to advise something illegal. I believe that this feeling is partly responsible for the classical "wait and see" attitude of the psychiatrist, who often waits until the patient is too far gone in mental illness for abortion to be therapeutically useful. It should not be beyond the ability of two learned professions to devise a formula which acknowledges "reason" to be as important as "life," and which gives legal sanction to practitioners and experts alike to consider the "health" of the mother in a very wide sense.

This case raises many interesting points, and I would crave space for one more. As the law stands the quality of the offspring is no concern of the doctors when abortion is under consideration. Accurate eugenic information remains scanty, but it can be accepted as proved that the child of a girl of fifteen years is likely to be weaker, mentally and physically, than the child of an adult woman. This letter is no plea for eugenic abortion, but I do suggest that doctors should be able to use the little knowledge they do possess of mental disease and its inheritance in relation to therapeutic abortion, without the feeling that a free judgment on any given case might involve them in criminal proceedings.

I am not qualified to discuss the legal aspect of this particular case, but I do feel that this is one of those instances which the recently abolished Grand Jury would have dealt with successfully by failing to find a True Bill, thus saving much anxiety and distress to all concerned.

I am, Sir, yours faithfully,

G. W. B. JAMES.

Harley-street, W., July 18th.

INFANTICIDE

To the Editor of THE LANCET

SIR,—Now that Lord Dawson's Infanticide Bill has become law, may I call attention to one aspect of the subject to which Lord Dawson made reference in his speech in the House of Lords on April 7th last, and to which you also alluded in your leading article of Jan. 22nd—namely, the medical as apart from the criminal side to these cases? Lord Dawson reminded us that magistrates already possess the power to remand such cases on bail, pending trial,

either to their homes or, if the facts of the case call for it, with a condition of residence in a suitable hospital. It seems that this power is not generally known or used; and the Parliamentary Medical Committee has therefore urged the Home Office to circularise magistrates, calling their attention to their powers in such cases.

I am, Sir, yours faithfully,

FRANCIS FREMANTLE,
Chairman, Parliamentary Medical Committee.

House of Commons, July 12th.

PSEUDO-DERMATITIS AUTOPHYTICA

To the Editor of THE LANCET

SIR,—In a comprehensive discussion on dermatitis autophytica last year Dr. Henry MacCormac (*Brit. med. J.* 1937, **2**, 1153) referred to this condition as "self-inflicted skin disease." In other words, there is a real physical lesion of the skin artificially produced by the patient. This is the usual meaning attached to the term, and appears in most text-books. In contrast with this type of case the following will be of interest:—

A girl of 13 attended the skin department of the Cardiff Royal Infirmary complaining of a persistent rash on the face. Three months previously there had been an irritable red spot on the left cheek, with fever. She was seen by her doctor at that time and a diagnosis of erysipelas was made. She was treated with a bland ointment and Prontosil by the mouth. The rash slowly spread until it was 2 in. across and then disappeared, its total duration being three or four weeks. The skin then remained normal for four weeks. At the end of this time, one month before the date of examination, a rash appeared on the same site as before and had remained in spite of treatment with prontosil and ointment.

The patient is a bright and apparently intelligent girl, the youngest of a family of four sisters and one brother. While she had the rash she has not attended school, but ordinarily she seems to like school and to get on well there. Her mother does not find her in any way a difficult child.

The rash consists of a dusky deep red erythema, sharply outlined, with no vesicles or scaling. It is distributed on the whole of the nose and on the adjacent part of the left cheek, extending over the malar region. The appearance at once suggests erysipelas. On close inspection, however, the hair follicles on the nose are visible as dark red points, as if containing dirt. Cleaning the skin with an ether-soaked pledget of wool removes the "rash" entirely, leaving a completely normal skin. The colouring matter in the pledget is the colour of rather dark cosmetic rouge. Rouge of this sort is used by the elder sisters of the patient, and she has access to it. She denies all knowledge of this and offers no explanation of the rash.

In this case, not only is the condition self-produced but the lesion is in fact non-existent. This is so different from dermatitis autophytica, where definite, sometimes extensive and destructive physical lesions are found, that the same name cannot be applied to both. For this reason I have used the term pseudo-dermatitis autophytica. The whole of the second attack was no doubt artificial. I am inclined to believe that the first attack was originally erysipelas, though possibly the artificial rash was produced as the erysipelas subsided, thus explaining the apparent failure of prontosil and the long duration of the condition.

A similar case was seen a short time previously. This was a girl of 11 who was referred to the skin department as a suspected dystrophy of the finger-nails which had not responded to oral medication. The nails were normal in shape and texture and presented a peculiar polished appearance in places. They were, in fact, varnished, and to the surprise of the mother the "dystrophy" was removed with a nail-varnish remover.

In both of these cases the method of production was simple but had been very effective. This type of case merits attention since both of the patients had succeeded in deceiving parents, doctors, and school authorities.—I am, Sir, yours faithfully,

Cardiff, July 15th. F. RAY BETTLEY.

CHEMOTHERAPY BY RUBIAZOL

To the Editor of THE LANCET

SIR,—May I correct a statement in my paper entitled the Chemotherapy of Bacterial Infections (*Lancet*, May 14th and 21st, pp. 1125 and 1178) which was made under a misapprehension? The offending statement refers to Rubiazol as ". . . the French equivalent of Prontosil, which owes its manufacture in France to the exemption of medicaments from patent law in that country." It has been represented to me by Messrs. Roussel Laboratories that this statement and its implication are incorrect. They point out that although patent law in France differs from ours, it would not protect them in countries other than France against an action for infringement in such a case as this, unless they could claim independent rights. I was misinformed in this matter and regret that this statement should have been misleading.

I am, Sir, yours faithfully,

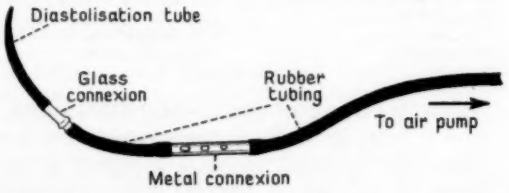
Harpenden, July 16th. LAWRENCE P. GARROD.

DIASTOLISATION

To the Editor of THE LANCET

SIR,—When on June 4th Mr. Miller wrote in your correspondence columns about diastolisation I was experimenting with a modification of this technique. I now connect the diastolisation tube by rubber and glass tubing with an air-pump.

Into the rubber tubing is inserted a piece of brass tubing, 4½ in. long, in which three holes of different diameter have been drilled. These are such that



when all are left open, and the air-pump is running, no effect is produced on the tube. When one, two, or three are closed by the fingers, varying degrees of vibration are imparted to the tube. Instead of pushing the tube in and out the fingers are moved rhythmically on and off the holes.

I have found that when this treatment is applied to each nostril for about a minute, two or three times a week, results appear better than with the other technique. The degree of intensity and the rapidity of rhythmical variations are determined by the condition to be treated and the sensitivity of each individual.

This little instrument, when attached to a Seigle speculum, with an aural vibrator, can be used for oto-massage.

I am, Sir, yours faithfully,

HENRY W. HALES.

Upper Brook-street, W., July 6th.

ABORTION AND THE LAW

To the Editor of THE LANCET

SIR,—Much publicity is being given in the lay press to an alleged breach by a distinguished medical man of the law relating to abortion. The question has therefore been raised of how far this law is open to criticism on medical, social, and genetic grounds. We are aware that the subject is now being fully considered by a Departmental Committee. But we understand that the findings of this committee will not be made public in the immediate future.

Many arguments have been advanced in favour of widening the grounds upon which it should be legally permissible for pregnancies to be terminated. It is to one only of these arguments—namely, the genetic—to which we would like to draw attention. Certain recommendations have been made by a Departmental Committee on Sterilisation as to the categories of persons for whom facilities for voluntary sterilisation should be made available on genetic grounds. We associate ourselves with these recommendations.

From the biological standpoint, we consider a sterilising operation to be a more significant and drastic procedure than a termination of pregnancy, in that the first measure destroys fecundity, while the second does not. We therefore think that facilities for the voluntary termination of pregnancy should be made available to those persons specified by the above-mentioned Departmental Committee as being appropriate candidates for voluntary sterilisation.

We further think that similar facilities should be extended to women who have become pregnant as the result of an incestuous union or of rape. That a child who has been brutally conceived as a result of a criminal assault on its mother will be handicapped later in life by environmental and nurtural factors can scarcely be disputed. It is no less obvious that the child is liable to inherit from the father some, at least, of the qualities which prompted the action which gave it life. These are not qualities which anyone would wish to be perpetuated.

The force of these considerations has been recognised by at least one foreign country. In Denmark there took effect on April 1st of this year a law according to which a pregnant woman may have a pregnancy terminated in the following cases :—

(1) If the termination of pregnancy is necessary in order to avert serious danger to the life and health of the woman.

(2) If the woman has become pregnant as a result of an incestuous union or of rape.

(3) If there is obvious danger that the child, owing to hereditary disposition, will suffer from insanity, mental deficiency, from grave mental disorder, epilepsy, or serious and incurable physical disease.

A translation of this law appears in the *Eugenics Review*, Vol. 30, No. 1 (April, 1938).

The grim predicament of the mother, the future well-being of the childthus inauspiciously launched into existence, and the interests of posterity, simultaneously call for a widening of the grounds upon which abortion should be permitted.

We are, Sir, yours faithfully,

HORDER (President), R. RUGGLES-GATES,
HAVELOCK ELLIS, J. A. RYLE,
JULIAN HUXLEY, C. P. BLACKER
W. LANGDON-BROWN, (General Secretary).
E. MAPOTHER,

Eugenics Society, 69, Eccleston-square, London, S.W.1, July 20th.

REFRESHER COURSES UNDER THE MINISTRY OF HEALTH

To the Editor of THE LANCET

SIR,—An article on this subject appears in your issue of June 25th (p. 1453). It may be of interest to some of your readers to know that in 1925 the Northumberland Insurance Committee, on the suggestion of Dr. Rutter, organised classes of a fortnight's duration to be held under the auspices of the University of Durham College of Medicine (now the Medical School, King's College, Newcastle-upon-Tyne); and these courses have been held yearly from that date up to the present time. Practitioners also attended from Durham, Lancashire, Cumberland, and Westmorland, by arrangement with the panel committees of those counties.

The Medical School now takes part in the present scheme of the Ministry of Health, and classes of a fortnight's duration are being held three times a year.

I am, Sir, yours faithfully,

R. B. GREEN,
Dean of Medicine.

Medical School, King's College, Newcastle-upon-Tyne, July 19th.

A "HARMLESS" HAIR DYE

To the Editor of THE LANCET

SIR,—Might I refer to my letter on p. 108 of your issue of July 9th. It has been pointed out to me, and I agree, that, although I noted an analyst's report of a 10 per cent. solution of dichromate of potash, nevertheless the instructions say that it is to be used with an equal quantity of warm water. As this omission is open to misinterpretation, I would be glad to make this correction and addition.

Furthermore, if in further supplies of this product this concentration is materially reduced, it is proper to add that the zone of safety to its users would be very considerably enlarged.

I am, Sir, yours faithfully,

Harley-street, W., July 19th. W. J. O'DONOVAN.

*** We have been informed that the said solution will not be issued at a greater strength than 3·50 per cent. as delivered, so that diluted with an equal quantity of water it would be applied to the hair at only 1·75 per cent.—ED. L.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—At a meeting of the court of directors of this society held on June 6th, with Mr. V. Warren Low, the president, in the chair, three new members were elected and the death of one was reported. Grants amounting to £2423 were voted as half-yearly payments to the 61 widows and 5 orphans in receipt of relief. Included in this sum was a special grant of £78 to enable three orphans to study for some professional career. A widow of a deceased member applied for relief and was voted an annual grant of £50 from the ordinary funds and one of £25 from the Brickwell fund. It was decided that the proposed dinner to celebrate the 150th anniversary of the foundation of the society should not be held. Membership of the society is open to any registered medical man, who at the time of his election is residing within a twenty-mile radius of Charing Cross. Relief is only given to the necessitous widows and orphans of deceased members. Full particulars may be obtained from the secretary at the offices of the society, 11, Chandos-street, Cavendish-square, London, W.1.

A CHARGE OF ILLEGAL ABORTION

REX v. BOURNE

ON July 18th and 19th Mr. Aleck William Bourne was tried at the Central Criminal Court before Mr. Justice Macnaghten on a charge of illegal abortion. The indictment, as read by the Clerk, charged Mr. Bourne that on June 14th, 1938, he used an instrument with intent to procure the miscarriage of a girl. Mr. Roland Oliver, K.C., who appeared for the defence with Mr. Gerald Thesiger, asked that the word "unlawfully" should be put into the indictment as he understood that the Crown admitted that the operation might be done lawfully and his case largely rested on that word. The Attorney-General, Sir Donald Somervell, K.C., who with Mr. L. A. Byrne and Mr. Henry Elam appeared for the Crown, observed that the indictment could not alter the law but agreed that the word should be inserted. This was done, and Mr. Bourne pleaded Not Guilty.

On the motion of Mr. Oliver, with which the Attorney-General associated himself, the judge warned the jury that if any member by reason of any preconceived view felt difficulty about giving a verdict according to law and according to the evidence, it was desirable in the interests of justice that he or she should withdraw. No member withdrew, and the jury were sworn.

Case for the Crown

The Attorney-General, opening the case, explained that the charge was based on the Offences against the Person Act, 1861, s. 58, which stated that any person who unlawfully used an instrument with intent to procure the miscarriage of a woman, whether she was with child or not, was guilty of a felony punishable with penal servitude for life. The girl in the case was under 15 years of age and on April 27th she had been raped by a man who had later been convicted of that offence; everyone must feel the most profound sympathy with her. On May 21st she had been taken to see Dr. Joan Malleson, who had come to the conclusion that she was pregnant and had referred her to the defendant, Mr. Bourne. She had written to him saying that she had been consulted by the organiser of a schools care committee about the girl; the patient appeared to be free of venereal infection, but the Aschheim-Zondek test was positive. Everybody connected with the case considered that curettage should be allowed her, and one (named) psychiatrist and possibly others of good standing would be prepared to sponsor "therapeutic abortion." She presumed (her letter continued) that they recommended this course on the ground of prophylaxis, because no nervous disorder appeared to be present. All this, however, would not advance the case unless someone of Mr. Bourne's standing would be prepared to risk a cause célèbre and undertake the operation. Many people held the view that the best way of correcting the present abortion laws was to let the medical profession extend the ground for therapeutic abortion in suitable cases until the law had become obsolete as far as practice went. She would imagine that public opinion would be immensely in favour of the termination of pregnancy in a case of this sort. If there was any chance that, given adequate professional backing, Mr. Bourne would be prepared to consider the operation, she would take much trouble to get persons of high standing to see the girl, and would of course feel that it would be most valuable if the case were conducted publicly in hospital. She was told, she added, that a rather grim twist was given to the case by the fact that the girl's parents were so respectable that they did not know the address of any abortionist, and she gathered that they were trying to find one, because they felt that they could not possibly let the girl go through with the pregnancy. The patient seemed a normal, healthy girl, and on medical terms there seemed nothing to be said. She had added in a postscript that the matter was unfortunately made more difficult by the fact that the girl had been admitted to St. Thomas's Hospital under a certain medical man who she thought from his attitude must be a Catholic: he had adopted the conventional standpoint that he would not interfere with life, because the child might be a future Prime Minister of England, and "that anyhow girls always lead men on." The patient was, however, no longer under his care.

The defendant had replied that he was interested in the case, and continued: "I shall be delighted to admit her to St. Mary's and curette her; I have done this before and have not the slightest hesitation in doing it again. Therefore please let me have her name and address or ask her parents to send her to see me. I have said that next time I had such an opportunity I would write to the Attorney-General and invite him to take action."

On May 31st the girl had been taken by her mother to see Mr. Bourne, and the father had written a letter saying that he gave his consent to the operation on condition that no publicity of any sort was given to the case. On June 2nd Mr. Bourne had written to Dr. Malleson saying that he must do in the matter of publicity as the parents wished and that the operation would be done next week. Next day he had written to the father that he had made arrangements for the girl to go into St. Mary's Hospital and assured him that no effort would be spared to keep the matter secret. On June 10th he had written again to Dr. Malleson saying that the girl was safely in St. Mary's and he was waiting for the result of a test for pregnancy, and asking her whether anything could be done to persuade the father to revise his first decision. The Attorney-General said that the matter had been brought to the notice of the police authorities, but that that had been in no way due to any act of Mr. Bourne, who had done nothing inconsistent with his undertaking. The operation had been performed on June 14th.

Concluding his address Sir Donald said he would not submit that, on the construction of the statute, if it was necessary in order to save the life of a mother to use an instrument to procure a miscarriage, that would be an offence.

The girl then testified that she had on April 27th been raped by a soldier. She had been admitted to hospital and Mr. Bourne had performed an operation on her.

Her father said in evidence that he had given no one permission to publish the facts.

REASONS FOR TERMINATING A PREGNANCY

Dr. Joan Graham Malleson, cross-examined by Mr. Roland Oliver, K.C., for the defence, said that great variations existed in medical opinion on what was lawful in the procuring of abortion. Some would not admit it even to save life; others, whose view she shared, held that it was lawful in the interests of the mother's health and to prevent a breakdown—physical, mental, or nervous. Many doctors, she thought, considered that the law should allow abortion on "humanitarian" grounds, but not many would

perform an abortion on such grounds, and she knew of none who thought the law allowed them to do so. Qualifying her answer, she said she knew some doctors who would terminate pregnancy on the ground that the child was likely definitely to inherit a bad trait. She had heard of doctors who had aborted a woman who had been raped, and she would think that right. In answer to the judge she said she meant it would be right in a case where rape had been proved in court, not where a woman said that intercourse had taken place without her consent. In further cross-examination, she said she considered that a case would be proper for abortion if the ordinary danger to the mother's life was increased by the fact that her age was only 14, and she had been injured in the rape: the girl's mental condition might put her in grievous danger, and her nervous system might stand a good chance of being shattered.

Mr. P. C. F. Wingate stated that he had been a resident medical officer at St. Mary's Hospital until the end of June last. Mr. Bourne had explained the circumstances of the case to him, and said that he had been asked to terminate pregnancy and to report his action to the appropriate authorities in the hope of making a test case, but that the parents had only consented on condition that no publicity was given. A test for pregnancy had been carried out in the hospital, with positive result. He had been present at the operation—a dilatation and curettage to empty the uterus. The girl had been discharged on June 25th. In cross-examination, he said it was proper that the girl should be under observation for a considerable period, as this girl had been. To repeat the tests for pregnancy and venereal disease, as Mr. Bourne had done, was careful and proper treatment. The taking of the swab would not hurt her, though it might be uncomfortable. She had cried and been a little distressed. He did not remember that Mr. Bourne had said anything. Her behaviour had not impressed him; he had rather expected her to be distressed in the unpleasant circumstances. He agreed that she was a proper subject for curettage.

Chief Inspector Walter Bridger, of Scotland Yard, gave evidence that, with another officer, he had seen Mr. Bourne at St. Mary's Hospital on June 14th. Mr. Bourne said he had done the operation that morning, and wanted the officers to arrest him. He had cautioned the defendant and said the facts would be reported to the proper authorities. The defendant had then made a short statement of the facts, and had said that in his opinion as an obstetric surgeon it might be dangerous for a girl of her age to bear a full-term child. Cross-examined, the witness said he had then told Mr. Bourne that his visit was useless, as he had come to warn him that the authorities could not consent to any action he proposed to take. He did not remember Mr. Bourne then being rather nettled and saying he had his responsibility as a surgeon and could not be dictated to over such a matter, but if Mr. Bourne said so he would accept it. He would accept anything Mr. Bourne said.

Directions in Law

The case for the Crown being closed, Mr. Roland Oliver asked the learned judge to declare what directions in law he would give the jury. The Attorney-General, he pointed out, had implied that he did not regard as unlawful an abortion undertaken to save the life of the woman. The case was not covered by any authority, and the word "unlawful" would mean what his Lordship declared it to mean. He himself submitted that anything which in the view of a responsible, skilled surgeon was for the benefit of the mother's health, in the broadest sense, to save it from serious impairment, was sufficient justification for this use of an instrument. An operation to remove a limb or an eye was an offence against the person, or "mayhem," if it were not justified by benefit to the patient's health. The same standard of benefit should be applied to abortion. Other sections of the Act provided an equal penalty—penal servitude for life—for those who used an anæsthetic or caused grievous bodily harm "unlawfully and maliciously." No one would suggest that these acts could only be done in a case of life or death. The question for the jury should be: Was Mr. Bourne acting in the honest and reasonable belief, based on adequate knowledge and experience, that it was in the best interests of the girl's health that her pregnancy should be terminated? He quoted from the latest edition of Russell on Crimes (vol. 1, p. 517) a statement which had appeared in successive editions since 1909:—

> "The word 'unlawfully' excludes from the section acts done in the course of proper treatment in the interest of the life or health of the mother."

It had never been challenged, he said, though it was not an authority.

His Lordship addressed the jury, agreeing that the word "unlawfully" was not without meaning and that there might be a lawful procuring of abortion. This had been a common-law offence before Parliament existed and long before the Act of 1861. Apparently the Act had been passed because there had been some doubt whether procuring abortion by administration of poison was unlawful under the common law. This section merely repeated the common law. It was undoubtedly an offence against the law of England for any woman to procure her own miscarriage, whatever the reason. There was no authority to rely on, as the issue to be tried in this case had never before been raised, but it was obvious that the act, if done by skilled persons without risk to the patient and on purpose to save the life of the mother, must be lawful. There were cases where it was reasonably certain that a woman could not survive delivery of the child and an operation terminating pregnancy would be lawful. That had always been the view of the judges. The position had been greatly simplified by an Act of 1929 which stated that the killing of an unwanted child by accoucheur or mother was murder, but which allowed an accoucheur, during the delivery of an unwanted child at full term, before it had been separated from its mother, to destroy the child if the act was done in good faith for the purpose only of preserving the life of the mother. The proviso was negative, and the burden of proof rested on the Crown to prove that the act was not done in good faith. If, after hearing the evidence, the jury were satisfied that the Crown had proved that Mr. Bourne had not terminated the pregnancy in good faith for the purpose only of preserving the girl's life, he should be found guilty. The meaning of "preserving the life of the mother" must depend on the evidence. If the Crown did not prove this negative, Mr. Bourne must be found not guilty. In his opinion the proviso in the Act of 1929 was implicit, and always had been implicit, in the section under which Mr. Bourne was charged. He regarded the matter as one depending on the facts in each particular case and nobody could say without knowing them whether it was lawful or unlawful.

Case for the Defence

Mr. Oliver, in opening the defence, said he did not suppose that a man had ever stood in the dock who had been more certain, at the time of doing the act with which he was charged, that he was doing his duty. He had pilloried himself for what he believed to be right. Mr. Oliver reviewed the motives for desiring abortion, and pointed out that the section in the Act was directed against the professional abortionist. The gravest misgivings had always beset qualified medical men in deciding the legitimate indications for the operation. The views of the medical profession varied widely. The mere fact of rape would not be a legitimate cause as the law stood. The reasonable view was to consider each case on its own merits. Mr. Bourne had been well aware of the controversy and in his opinion this was a case where the operation ought to be performed. For want of a better word Mr. Oliver said that Mr. Bourne had been prepared to make a martyr of himself in order that the law might be clarified. His arrest in this case, however, was none of his doing, as he had promised the father professional secrecy and had loyally kept his promise. A child of 14 had been brutally raped, injured, and terrified, in the most terrible circumstances. Nevertheless, Mr. Bourne would agree that even a girl of that age might bear the delivery of a child conceived in such circumstances if she were of a certain type and fibre. He had found this girl, however, a sensitive type who would be shaken to the core by that ordeal. Mr. Oliver emphasised that Mr. Bourne had not pounced on the case to prove his thesis; he had watched her for eight days before operating, in order to form an opinion on her.

MR. BOURNE'S EVIDENCE

Mr. Bourne, giving evidence, said that the correct termination of pregnancy was known as lawful abortion, and that it was a constant problem among gynæcologists. On Oct. 22nd, 1935, he had operated on a similar case, aged 15, and the house surgeon had left the theatre on hearing the nature of the case. The patient had been sent by Sir Charles Wilson and he had at first refused to induce abortion, but had later consented on finding that the girl's health was deteriorating. Since that case he had considered the matter very carefully, and he had made up his mind to try and obtain a ruling of the court on the next case. He could not draw a line between danger to life and danger to health; if one waited for danger to life, the woman would be past assistance. He would terminate pregnancy if he believed there was serious danger to health. He regarded the operation as a major one. He thought that 99 per cent. of doctors would agree to the performance of abortion on the cases in which he had done it. He emphatically included mental health in "health"; each kind of health reacted on the other. It was almost certain that the child would be physically injured by delivery; terror and fear were the most serious deterrents to labour and the resulting interference would cause damage. The physical consequences he had anticipated were indirect ones. He admitted a bias in the direction of relieving the child, as he had heard of the crime for the first time when she came to him, but he had, nevertheless, taken her in for careful consideration. He had repeated the pregnancy and venereal disease tests which had already been done. He had satisfied himself that she was not mentally deficient, not of the prostitute type, and not infected. He would not operate on a mental defective, because in his experience such patients suffered no distress and it was not his business to prevent the birth of a defective child; he was solely concerned with his patient. He had made up his mind that in his opinion this girl was emphatically a case for operation. The general demeanour of the girl had been surprisingly unworried and cheerful; that had made him suspect a defence façade against her feelings. His suspicions had been confirmed when he took a swab on the morning of the operation—his first examination. He had caused no pain, but she had broken down and wept. He had feared for her, if he did not operate, a less important and probably reparable physical injury, and a far more important mental injury, which would last a very long time and be the source of nervous and psychoneurotic troubles which would last all her life.

Cross-examined, he denied that the letter to Dr. Malleson saying "I shall be delighted to admit her to St. Mary's and curette her" meant that he would do so without examination or consideration. It was common form, the consideration being taken for granted. Every week he turned down patients as unsuitable for operation after they had been in hospital for a week, having been admitted "for operation." He had read Dr. Malleson's letter saying she was a normal, healthy girl and that on medical terms there was obviously nothing to be said for operation. When he wrote "I have done this before and have not the slightest hesitation in doing it again," he meant what he said. His record of abortion would stand examination by anyone; he was more particular than many of his colleagues. He agreed that it meant a prima-facie willingness to operate provided no contra-indication applied. When he said "next time I have such an opportunity" he had not referred to opportunities of therapeutic abortion to save life from immediate danger; he had meant a child pregnant after rape below the age of consent with all the makings of a state of fear. Statistical experience from the annual reports of maternity hospitals showed that young children who passed through pregnancy and labour showed an extraordinarily high percentage of really serious physical disorders. He agreed that he had told the father that the object of admission was to terminate pregnancy, but maintained that there was always the proviso that he would only operate if it proved to be a suitable case. He took the facts of rape and age together and did not weigh them separately as indications; the two together made a certain type. If the patient were under age but not raped it would make him equally careful in ensuring that there were no contra-indications. There would not be in such a case the initial element of fear, to which he attributed so much importance. He agreed that the state of development of the girl affected the physical consequences; this girl had been at the upper limit of normal development for her age.

The Attorney-General suggested that there was a perfectly clear line between danger to health and danger to life. Mr. Bourne agreed that there was a large group whose health would definitely be damaged but whose life would not be in danger. On the other hand, life might be shortened indirectly. It was true that childbearing was always attended by danger and that physical health was damaged by it in certain cases. Certain operations were also dangerous to health, and in the majority the doctor was clear whether the procedure was necessary to preserve life. In this case the operation was not necessary to save her immediate life; he had apprehended that

her nervous system would be very adversely affected if he did not operate. He emphasised that he knew that that mental state would sooner or later undermine her physical health and produce physical symptoms. He had not had personal examples of permanent damage of this kind, but he had had many brought to his notice in various ways. The psychologist would see such cases more than the gynæcologist. He had not taken any second medical opinion, though it was the regular practice to take one for therapeutic abortion. He was usually the person consulted in such cases and he regarded himself as the second opinion. He asked second opinions if the reason alleged for the abortion were outside his province, such as chest symptoms. In this case he thought the psychological reasons were within his competence. The interval between admission and operation was abnormally long; two days was the average in his wards. For this special type of case two weeks' observation was not unusual.

Re-examined, he said he would not have done the operation if he had not had an opportunity of observing the girl.

Medical Witnesses

Dr. J. A. Gorsky, police surgeon, described his examination of the girl at the police-station at 11 P.M. on the night of the rape, and repeated the story which she had told him. His findings on examination had been consistent with her story of rape with violence. He had concluded that she had, until just before the rape, been a virgo intacta.

A PSYCHOLOGIST

Dr. J. R. Rees was then called. He agreed that there was always interaction between mind and body, and that things of the mind were bound up with physical well-being. He had had occasion carefully to consider the grounds on which he would advise such an operation. The facts that the child had been raped, and that she was fourteen years of age, would be strong predisposing factors in his mind. He would certainly, without any question, have advised the termination of this pregnancy, because he would have been certain that there would have been trouble in future.

Mr. Roland Oliver: "Have you any doubt whatever on the matter?"—"Not the very least."

Dr. Rees described the dangers which he might anticipate as similar to those of shell-shock: the girl had been wounded, she might be said to have been blown up, and he did not see why she should go on and be buried as well by permitting the pregnancy to continue. If it did continue, there would almost certainly be some kind of mental breakdown. Asked about his experience of such cases, he said that he personally had known two instances where the girl had become pregnant under the age of consent: one by rape and the other by incestuous intercourse with her father. Both the patients had been grown up when he had first seen them and both had given birth to full-term children. They had suffered from various neurotic difficulties which had crippled them ever since the pregnancy: anxiety states of a serious kind. Neither had been able to make a successful marriage, and both were mentally abnormal, terrified of sex, and unstable in every way. He thought that, without question, the mental state would have been better if the pregnancy had been terminated. He had heard of a number of other cases from his colleagues; there had been mental breakdown and even schizophrenia as a result of this situation; in fact he could not find any case in which the mother was subsequently mentally normal, although in two cases she had been physically normal. Asked if he regarded Mr. Bourne as a competent psychologist, Dr. Rees replied that he had the reputation of being one of those gynæcologists who had bothered most about the psychological aspect of disease.

Cross-examined by the Attorney-General, he denied that it was quite impossible to determine how much of the mental disturbance was due to the original rape and how much to the subsequent childbearing; research on child assault had recently been carried out, and there was some evidence to show that the dramatic episode was not so important as the continual strain that went on as a result of pregnancy carried to term. He had considerable experience of rape without conception, as he had been collecting material on this subject for some years. Symptoms certainly arose in such cases, but he definitely thought that the risk of mental disturbance was diminished if the pregnancy were terminated. This decision was based not on the necessity to save life but on the importance of preserving health. He agreed that the symptoms might all be found in other patients arising from other causes, but at the same time maintained that the resentment, the immense and crushing sense of inferiority, and the interference with the instinctive life, in the degree in which they were found in this type of case, constituted unique symptoms which were not produced by any other single circumstance or set of circumstances.

A GYNÆCOLOGIST

Mr. William Gilliatt said he had known Mr. Bourne for over twenty years and believed him to be well qualified from the surgical point of view to determine whether an operation was desirable. He himself would undoubtedly have terminated pregnancy in this case after hearing Dr. Rees's opinion. Girls under 16 were more liable than older women to suffer from the complications of pregnancy, especially the toxæmias. Apart altogether from rape, it was more dangerous for a girl under 15 to bear a child than for a girl of 18; the three years undoubtedly made a great difference. The maternal mortality in the 15–20 age-group was 5 per 1000, and in the 20–25 age-group 4 per 1000. There were no official figures for childbearing under 15, but he had collected from the published reports of two maternity hospitals statistics relating to girls who bore children before the age of 16. The girl in question would have been 15½ at the time of the birth if her pregnancy had gone to term. The figures showed a much higher percentage of abnormal delivery in the young girls; they were confirmed by a recent German paper on the subject.

Cross-examined by the Attorney-General, he amplified the figures he had mentioned, saying that there had been three births to girls of 13, four to girls of 14, and thirty-five to girls between 15 and 16. The incidence of abnormal labour was 45–50 per cent. in these girls, and about 15–20 per cent. in older women. The chief difficulty encountered was ineffective action of the uterus, leading to artificial interference and sepsis, which had a permanent effect. If infection occurred in childbirth it remained for life.

In reply to Mr. Roland Oliver, he said that rape had not occurred, so far as he knew, in any of the cases quoted. He was speaking purely of physical consequences and was not concerned with mental symptoms in any way.

A PHYSICIAN

Lord Horder testified that he was not infrequently consulted as to the advisability of terminating pregnancy. He agreed that a history of rape and the fact of youth would bulk largely with him in forming a decision; he also attached importance to the personal observation carried out by Mr. Bourne. It was generally accepted that it was more dangerous for a girl of that age than for an older woman to bear a child. The facts, so far as he knew them, would have led him to the same conclusion as they had led Mr. Bourne. He did not recognise that the operation should only be performed to save life from immediate danger. The problem about which he was usually consulted was the danger of severe nervous or mental breakdown, and in such cases he approved the operation.

Cross-examined, he said that he had been asked to express his view on the facts as stated; he had never seen this girl. Asked to analyse these facts separately, he said that he would not necessarily advise abortion for rape alone, though he might; he thought that it was possible for a prostitute to be raped. Nor would he do it on age alone; the mental effect might be as great on an older girl. He agreed with Mr. William Gilliatt that the danger of toxic states was greater when conception had arisen in this kind of way. He would consider abortion if, during the pregnancy, the mother might suffer from the mental disturbance which had been spoken of, without projecting his mind beyond the period of pregnancy.

That terminated the evidence for the defence, and Mr. Roland Oliver then discussed once more with the judge the interpretation of the relevant sections of the Infant Life Preservation Act, 1929, and the Offences against the Person Act, 1861. He maintained that the proviso in the 1929 Act was not the one on which this matter should be determined; the statute dealt with quite a different matter. Section 58 of the 1861 Act should be construed in the light of other sections in the same Act.

Final Speech for the Defence

Mr. Roland Oliver, in addressing the jury, said that Mr. Bourne's attitude was that what he had done was lawful, right, and honest, and that he had committed no offence. He had intended to get the law declared, so that there should no longer be this controversy among the public and the profession as to what a doctor was or was not allowed to do. His view, shared by the most distinguished of his colleagues, was that where in the true interest of the patient's health—which involved the true interests of her life—it was, in the doctor's view, necessary to operate, he would operate, unless in that Court it was laid down by the learned judge and by the jury's verdict that it was not to be done again.

The statute under which Mr. Bourne was being tried had been passed as long ago as 1861, and forbade the unlawful use of an instrument. No definition of what was lawful or what was unlawful was contained in it; the question was left to the direction of judges and the good sense of juries. There must be some cases in which such a thing could be lawfully done by a skilled medical man in proper surroundings. The question was whether the circumstances which made the act lawful existed in the present case. The Act of 1929 forbade the destruction of an infant capable of being born alive before it had an existence independent of its mother. Between that case and the present there was one tremendous difference. The girl on whom Mr. Bourne had operated had been faced, when he was considering her health, her nervous system, and her mentality, with the task of carrying a child for seven or eight months and having it always with her to remind her of the most horrible thing that could ever happen to any girl. The woman in the case contemplated by the 1929 Act had passed through pregnancy and almost through labour, and the child was capable of independent existence. Clearly its killing could never be justified except solely for the preservation of the mother's life. In the present case it was possible to speak properly of the life of the mother in speaking of the preservation of her health, for on her health ultimately depended her life. A wide and liberal view should be taken of the meaning of "to preserve the life of the mother." To suggest that an abortion might only be carried out to save the mother from immediate death was a most extravagant proposition. It would mean that if the doctor were faced with the practical certainty that the woman would become insane, or have a complete mental and nervous breakdown so that her life would be ruined, he must not operate. That proposition revolted one's sense of justice and every other sense.

Mr. Bourne, in effect, said, "I have a patient; I have got to do the best I can for her. I have to contemplate what is undoubtedly a serious operation with far-reaching consequences, and to balance it against the other possible consequences. I have to say whether in my honest opinion it is better for this child's health to do what I am going to do, or whether, if I do nothing, her health—in the sense of her whole physical and nervous make-up—will not be absolutely ruined." Mr. Bourne had to put the same sort of question to himself as every other surgeon had to put who was faced with a badly smashed arm: "Shall I leave it on or take it off? Which is better for the patient?" The surgeon had to look to the future, to apply his life's experience, and either to say that he must take the arm off because, if he did not, in six months or a year things would be very bad indeed; or to say that he would not operate at once but wait a little longer. He must not wait too long, until the event which he dreaded had happened. Similarly, a surgeon would remove an eye to save the sight of the other, not necessarily because the patient would die if he did not. In the present case Mr. Bourne took the attitude that, with all the knowledge, learning, and responsibility he had, he had looked at the problem of this girl and come to the conclusion that to allow her to carry and bear her child would risk ruining her life. A reasonable apprehension of future trouble was enough to cause him to act. He had not to be able to say that the trouble would certainly happen. His experience told him that in such cases, after such an ordeal, the girl could not be anything but a nervous and mental wreck if she bore the child. Against that, he had to inquire whether she had venereal disease, or was mentally defective, or was of the prostitute type. He had found that she was none of these things, but a sensitive intelligent child of fourteen who was striving to master the horror of her situation behind a mask of courage. Mr. Bourne had described the complete breakdown which she had undergone from the very slight cause of taking the swab, and that had confirmed the view he had already formed. Mr. Bourne was not responsible for Dr. Malleson's opinions. Whether he had done right or wrong, he had given the girl the best chance she could ever have in life again. The prosecution had called no evidence to throw doubt upon the honesty and the competence of the defendant, or upon the proposition that the mental health of the

girl for the rest of her life would have been likely to be greatly prejudiced. If the jury said that he had committed a felony, one would be left reflecting gloomily on the sense and reasonableness of one branch of English law.

Final Speech for the Crown

The Attorney-General, in his closing address, said that the law was based on the sacredness of human life, and the destruction of that which was within the mother was the destruction of a potential life. There was a fundamental difference between preserving life and preserving health. In any given set of circumstances a doctor or surgeon would be able to say that he had done a given act to preserve the life of his patient. If he used those words, he meant something different from the words, "I did this to preserve the health of my patient." There was no suggestion that Mr. Bourne had acted other than in good faith, but he had not acted from the motive only of preserving life. Mr. Oliver's test was a wholly different one.

Mr. Oliver intervened to point out that he had framed his test before the learned judge had stated his view of the law. He would now alter it slightly, and ask: "Was Mr. Bourne acting in the honest and reasonable belief, based upon adequate knowledge and experience, that it was necessary for the preservation of the girl's health?"

Sir Donald submitted that Mr. Bourne's letters showed that he took a wide view of the cases in which the operation was proper to be performed. It was based on the mental and nervous disorder which might arise in the terrible circumstances. Sir Donald did not, he said, minimise the possible mental effects. The question was whether those mental effects, grave as they were, justified under the law the termination of the pregnancy.

Summing-up

Mr. Justice Macnaghten, in summing-up the case for the jury, said that, judging by the cases which came before the courts, abortion was by no means uncommon. Cases could as a rule only come before the courts when something had gone wrong, because the crime was committed secretly. This was the second case at the July sessions where a charge had been preferred for an offence against this section. He only mentioned the other case to show how different cases of that type were from the present one. A woman without any medical skill or qualification had unlawfully used an instrument for the purpose of procuring the miscarriage of a pregnant girl. She had done that for money: £2 5*s*. was her fee. She had used her instrument, and then within a few seconds the victim of her malpraxis was dead on the floor. She had been paid the rest of her fee and had gone away. The present case was very different. A man of the highest skill openly, at one of the great hospitals, performed an operation as an act of charity, without fee, unquestionably believing that he was doing the right thing and that he ought, in the performance of his duty as a medical man devoted to the alleviation of human suffering, to do it.

This was a most unusual case. The matter had never, as far as he knew, arisen before, for a jury to determine in such circumstances. There was obviously some doubt even among learned counsel as to what was the proper expression of the law. He saw no reason to alter what he had said on the law earlier in the case, and the question for the jury to answer was:

"Has the prosecution proved to your satisfaction, beyond reasonable doubt, that the act which Mr. Bourne admittedly did was not done in good faith for the purpose only of preserving the life of the girl?"

If the Crown had failed to satisfy the jury of that, Mr. Bourne was entitled to a verdict of acquittal. If they had satisfied the jury, the verdict must be guilty. His Lordship agreed that the Act of 1929 was dealing with a different set of circumstances. He considered, however, that the proviso to that Act, that no one was to be found guilty unless it was proved that the operation was not done in good faith for the purpose only of preserving the life of the mother, expressed what had always been the law in regard to the procurement of abortion, and that the word "unlawful" in the 1861 Act bore the same meaning.

The ordinary case of criminal abortion would be in no way affected by the consideration of the question at present before the jury. The Crown had to prove the same negative in the ordinary case, but in that case it was obvious that the defence of good faith could not be available.

His Lordship said that he had great difficulty in understanding what the discussion about the difference between danger to life and danger to health really meant. Life depended on health, and health might be so gravely impaired that death resulted. Certain things could obviously be a danger to health without being a danger to life, for example rheumatism. Cancer was plainly a danger to life to-day, but not necessarily always. His Lordship did not think there was a perfectly clear line of distinction between maladies that are a danger to health and maladies that are a danger to life. He would have thought that impairment of health might reach a stage where it was a danger to life. If Mr. Bourne's view commended itself to the jury—that there could be no division into two separate classes with a dividing line between them—then they might accept Mr. Oliver's construction of the words "for the purpose of preserving the life of the mother" in a wide and liberal view. His Lordship preferred the word "reasonable" to the words "wide and liberal."

His Lordship continued:—

"I do not think it is contended that those words mean merely 'for the preservation of the life of the mother from instant death.' There are cases, as I expect you know from your own experience, where it is reasonably certain that a woman will not be able to deliver the child of which she is pregnant and live. In such a case, where the doctor anticipates, basing his opinion on the experience and knowledge of the profession, that the child cannot be delivered without the death of the mother, he is entitled—and indeed it is his duty—to perform this operation with a view to saving the life of the mother. If knowledge and experience teach him that that is going to be the result, obviously the sooner the operation is performed the better. It is not necessary for the doctor to wait until the unfortunate woman is in peril of immediate death and then at the last moment, if he is successful, snatch her from the jaws of death. He is not only entitled, but it is his duty, to perform the operation with a view to saving her life.

"Variations exist, as you have heard, within the medical profession. Some there may be who hold the view that the fact that the woman desires an operation to be performed is sufficient justification for it. That is not the law. On the other hand, others, for what are said to be religious reasons, object to the operation being performed at all in any circumstances. That is not the law. On the contrary, a person who holds such an opinion ought not to be a doctor, practising anyhow in that branch of the profession. Indeed in a case where the life of a woman can be saved

by performing the operation, if a doctor refused to perform it on account of some religious opinion and the woman died, he would be in grave peril if he were brought before this court on a charge of manslaughter by negligence. He would have no better defence than a person who, again for some religious reason, refused to call in a doctor to attend to his child where, if a doctor had been called in, the life of the child would have been saved. He, also, is answerable to the criminal law for the death of his child.

"I mention those two extreme cases merely to show that the law, which is a reasonable law, lies between the two. It does not permit the termination of pregnancy except for the purpose of preserving the life of the mother, but those words ought to be construed in a reasonable sense. If the doctor is of opinion on reasonable grounds and on adequate knowledge that the continuance of pregnancy would probably make the woman a physical wreck or a mental wreck, the act is lawful."

His Lordship went on to say that each case must depend upon its own facts and that these must vary infinitely. It was very undesirable that a young girl should be delivered of a child, and Parliament had recently raised the age of marriage for a girl to 16. The medical evidence confirmed that view. The effect of rape upon a child under the age of 15, and that produced by pregnancy under such conditions, would be most prejudicial to her mind. It was the merest common sense that, the girl not being feeble-minded or of the prostitute class but an ordinary decent girl brought up in an ordinary decent way, the medical evidence did not understate the probable effects on the girl's life of having to bear this child. Regarding the danger to life, no one could be certain that there was danger to life unless he waited until the patient was dead. If a child suffered from acute appendicitis, the surgeon might not care to operate in the acute stage. If he operated at his own time he might guarantee the life of the child; if he only operated when life was threatened he could not do so. Even if when the operation was performed the appendix were found to be healthy and the surgeon wrong, he would have used his best judgment in good faith. Not only was he entitled to perform the operation but it was his duty to perform it. The only difficulty that arose in the case of abortion was that the law had always held human life to be sacred, and extended its protection to the unborn child. Only members of the medical profession could properly perform abortion. No doubt they would act only in consultation with some other doctor of high standing.

The jury then retired and, after an absence of 40 minutes, returned a verdict of Not Guilty. Mr. Bourne was discharged.

Mr. Bourne's defence was conducted by Messrs. Le Brasseur and Oakley, solicitors to the London and Counties Medical Protection Society.

DR. CUSHING AT OXFORD

ON Saturday last the honorary degree of doctor of science was conferred by the University of Oxford on Dr. Harvey Cushing, professor emeritus of neurology at Harvard. The event was more than academic, for in receiving this new degree Dr. Cushing also received expressions of respect and affection that few men could command. It was also more than English, for colleagues and old pupils from many parts of Europe had gathered to do him honour.

Before the ceremony a luncheon was given by Mr. A. D. Lindsay, LL.D., the vice-chancellor. The guests included Dr. Cushing's nephew (Dr. E. H. Cushing) and, among his friends, Dr. Arnold Klebs, Sir Almroth Wright, F.R.S., Sir Richard Livingstone (president of Corpus Christi), Mr. R. T. Gunther, LL.D., Prof. Raffaele Bastianelli (Rome), Dr. Thierry de Martel and Dr. Clovis Vincent (Paris), and Dr. George Riddoch (London). Others of the company were:—

Former surgeons-in-chief at the Peter Bent Brigham Hospital.—Sir D'Arcy Power, Sir Cuthbert Wallace, and Prof. George Gask.

Former pupils.—Prof. G. Schaltenbrand (Würzburg), Dr. Paul Martin (Brussels), Dr. Jean Morelle (Louvain), Dr. Ign. Olijenick (Amsterdam), Mr. Geoffrey Jefferson (Manchester), Mr. Norman Dott (Edinburgh), Mr. George Armitage and Mr. W. R. Henderson (Leeds), Mr. A. R. D. Pattison (Newcastle-on-Tyne), Prof. Hugh Cairns (Oxford), and Prof. J. Paterson Ross (London).

University officers and others.—Mr. Cyril Bailey, D.Litt. (public orator), Prof. J. A. Gunn, Dr. A. G. Gibson, Dr. P. del Rio-Hortega (Oxford), Mr. H. F. Alexander, and Prof. G. R. Girdlestone.

In presenting Dr. Cushing for his degree the Public Orator described him as a man who had removed more than 2000 brain tumours; a great baseball player who had taken up surgery and had explored its North-west Passage; an innovator in technique who performed not only with scalpel but with stilo; the biographer of his friend William Osler; and in the war a benefactor of the wounded in France. Here is the text of the speech:

Ecce chirurgus primarius, qui fausto exitu plus bis millies, ut verbis Ennianis utar, tumescens ferro 'cere-comminuit brum.' Medicis patre, avo, proavo prognatus et in Vniversitate Yalensi cum Doctoris gradum tum pilae lusoris litteram adeptus, postquam in Europa quoque disciplinam suam secutus est, domum reversus difficillimam cerebri secundi artem—id quod ipse olim chirurgiae Symplegadas nominavit—aegrotantibus maxime opitulair verbis arguebat, factis probavit. Quin ipse in hac arte mirum quantum provectus qui tardius agat melius agere demonstravit. Multum huiusmodi remediis prodesse vim electricam credebat; naturae fortasse medendi facultati diffidebat, nihil certe fortunae permittebat. Idem per viginti annos in Vniversitatibus Yalensi et Harvardiana Professor quod ipse didicerat, discipulos docuit, quorum complures hodie famam sibi maximam vindicaverunt. Nec scalpello tantum hic usus est sed etiam stilo. Nonne de nervis, de cerebri textura, de glandula pituitaria τέχνην ἔχουσι permulta scripsit? nonne nobis ἰδιώταις amici sui Willelmi Osler monumentum exegit praeclarissimum? Nunc, cum rude donatus ad nos hospes advenerit, ut viro honoribus prius cumulato nos quoque tributum nostrum offeramus, praesento vobis chirurgum eminentissimum, Harvey Cushing, illustrissimi ordinis de Balneo comitem, ut admittatur honoris causa ad gradum Doctoris in scientia.

Later in the afternoon there was a tea-party in the Nuffield Institute, where the hosts were Mr. and Mrs. Cairns, and the guests included Dr. Robert Hutchison, P.R.C.P., Prof. Le Gros Clark, Prof. H. W. Florey, Prof. R. A. Peters, F.R.S., Prof. L. J. Witts, Prof. J. H. Burn, Prof. R. R. Macintosh, Prof. Chassar Moir, Dr. T. A. Ross, Dr. Dorothy Russell, Dr. Ernest Mallam, Dr. P. C. Mallam, Mr. D. C. Corry, Dr. F. G. Hobson, and Dr. A. M. Cook. On Sunday morning Dr. Cushing gave a clinic on a case of pituitary basophilism.

OBITUARY

WILLIAM CLAUGHTON DOUGLASS, M.C., M.R.C.S. Eng.

Dr. Claughton Douglass, who died at Stanmore on July 7th, was a student at St. Bartholomew's Hospital, where he qualified in 1900. He was medical superintendent of Clare Hall small-pox hospital for 7 years from the time of the small-pox epidemic of 1901. Afterwards he was in general practice at Potters Bar until the outbreak of the late war when he immediately joined the R.A.M.C. He served with a field ambulance on the western front during the last 3½ years of the war, winning the Military Cross and holding the rank of major. He was badly gassed, but bravely carried on his work. After the Armistice he was first in command of the medical mission to Germany in search of prisoners of war, and later was chairman of an appeal board of the Ministry of Pensions and on the House of Lords appeal board. He then decided to specialise in electrotherapy, in which subject he had always been interested, and took his D.M.R.E. at Cambridge in 1926. He acted as clinical assistant in the X ray and electrotherapeutic departments at St. Bartholomew's Hospital and was, in turn, medical director of Comely Bank Electrotherapeutic Clinic, Walthamstow, assistant medical officer to the X ray and electrotherapeutic department at the Metropolitan Hospital and medical officer in charge of the electrotherapeutic department at the Connaught Hospital, Walthamstow. He contributed several articles on his specialty to the medical journals and was the author of "The Elements of Medical High-frequency and Diathermy" published in 1930. He lately acted as one of the consultants to the London Passenger Transport Board.

Claughton Douglass was a man of many interests. At one time he was a great boxer and runner, and he was always a keen fisherman and an expert horticulturist. For some years he was a member of the Savage Club, where his delightful personality gained him many friends.

He is survived by his wife, one daughter, and two sons.

JAMES ABERNETHY, M.B. Melb.

Dr. Abernethy, son of the Rev. James Abernethy of Melbourne, died on July 6th at the age of 72. Of Scottish descent, he was educated in Australia and graduated in medicine at Melbourne in 1891. Returning to England he practised first in South Wales, then in Ealing, and finally in Barnes, where for some thirty years he carried on a large practice single-handed. "He epitomised all that was admirable in the tradition of Victorian medicine," writes a friend. "From boyhood I was a constant visitor at his house, and I see him still as a tall man, kindly and courteous, busy but unhurried, to whom the interests of the patient were paramount; a man so sternly self-disciplined that never by look or word did he betray annoyance when his scanty leisure was interrupted by a late call. Infinite indeed was his sympathy for the sick; even if called away from a dinner party he would change his evening clothes before going out, lest the patient might feel embarrassed at having disturbed him. Though he belonged to a generation of doctors which did not look too kindly upon recreations or side-lines, he was a good billiards-player and found time for several years at the beginning of the century to hold a commission in the volunteers. Throughout his life his interest in the progress of medicine and the natural sciences never flagged and he was always prepared to discuss these and other weighty matters on terms of equality with his less well-informed juniors. In retirement his energy was unimpaired and his zest for life seemed, if anything, to increase. It will be a consolation to his many friends to know that the years were kind to him and that death, when it came, came swiftly."

Dr. Abernethy leaves a widow and one son and daughter.

PUBLIC HEALTH

Compulsory Notification of Measles and Whooping-cough in London

A PUBLIC health measure of considerable importance will come into force on Oct. 1st, when measles and whooping-cough are to be made compulsorily notifiable throughout London by a regulation of the Minister of Health, under the Public Health Act, 1936. The measure, which has been adopted at the instance of the London County Council, constitutes another step in the unification and coördination of the public health services in London. At present in only one metropolitan borough is notification of all cases of measles required; in seven it is limited to the first case in the same household or institution within a period of two months, and in three an additional restriction to children under 3 years of age is made. Whooping-cough is at present compulsorily notifiable in five boroughs, but notification is limited in two of them. The present measure entails notification of the first case of measles and whooping-cough occurring in the same household or institution within two months.

The immediate effect of notification will be to focus attention on measles and whooping-cough as serious infectious diseases, which tend to be regarded lightly as inevitable events in the life of a child. Likely developments will be the allocation of an increased proportion of available accommodation at fever hospitals for whooping-cough, which will probably have priority over scarlet fever as an admissible disease; increased facilities for the supervision of contacts—possibly with arrangements for establishing early diagnosis by means of cough-plate in whooping-cough—and arrangements for the home nursing of mild and uncomplicated cases. It is possible to visualise a complete service, incorporating schemes for the active immunisation of whooping-cough contacts by specific vaccine and the prevention or mitigation of measles by immune sera, with the consequence that less and less hospital accommodation will be required.

Distribution of Milk during the Summer Holidays

A scheme has been prepared by which milk is to be distributed during the summer holidays to children who receive it during term-time at London County Council schools. As far as possible, the distributing centres will be in parks and open spaces, but 37

schools will also be used and their playgrounds will be open for play centres and organised games. The total cost is estimated at £1593, based on the average daily attendance (about 20,800 free cases daily) during the Easter holiday distribution.

Modernisation of L.C.C. Hospitals

Proposals involving the expenditure of approximately £250,000 for the following alterations and improvements have been submitted to the L.C.C. by its hospital and medical services committee: (1) a new nurses' home at Eastern Hospital, to contain 280 bedrooms, sitting rooms for the staff, demonstration and lecture rooms, a library, a nurses' laundry, shampoo rooms, and grounds, including a hard tennis court (£114,230); (2) a new mental unit for female patients at Fulham Hospital, a new mortuary, and the conversion of part of the grounds to gardens (£37,645); (3) a new maternity ward block at St. Alfege's Hospital, Greenwich, containing 95 beds for women and 84 cots (£85,400); and (4) reconditioning and improvement of the north-east block of St. Clement's Hospital, Poplar, to provide accommodation for chronic sick patients (£11,785).

The committee also recommend the provision of a portable X ray unit at seven acute infectious diseases hospitals not already so equipped.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 9TH, 1938

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 1751; diphtheria, 1001; enteric fever, 13 (50 "expected"); pneumonia (primary or influenzal), 500; puerperal pyrexia, 169; cerebro-spinal fever, 18; acute poliomyelitis, 6; acute polio-encephalitis, 1; encephalitis lethargica, 4; dysentery, 51; ophthalmia neonatorum, 113. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on July 15th was 3288, which included: Scarlet fever, 703; diphtheria, 936 (carriers 49); measles, 519; whooping-cough, 263; puerperal fever, 14 mothers (plus 8 babies); encephalitis lethargica, 280; poliomyelitis, 0. At St. Margaret's Hospital there were 28 babies (plus 10 mothers) with ophthalmia neonatorum.

Deaths.—In 126 great towns, including London, there was no death from small-pox or enteric fever, 7 (3) from measles, 2 (0) from scarlet fever, 3 (1) from whooping-cough, 22 (2) from diphtheria, 64 (19) from diarrhœa and enteritis under two years, and 11 (2) from influenza. The figures in parentheses are those for London itself.

Fatal cases of diphtheria were reported from 17 great towns 3 each from Leeds and St. Helens. Birmingham reported 9 deaths from diarrhœa, Manchester 5, Liverpool 3.

The number of stillbirths notified during the week was 326 (corresponding to a rate of 46 per thousand total births), including 51 in London.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Insanity as Ground for Divorce

IN the House of Commons on July 12th when the Divorce and Nullity of Marriage (Scotland) Bill (which has already passed through the House of Lords) was read the third time, Mr. WESTWOOD moved an amendment to delete from the additional grounds for divorce provided for in the Bill the ground of incurable insanity. He said that the insanity of a wife or husband might even have been caused by the cruelty or some other action of the other party and he could not agree that divorce should be possible under those circumstances. There were also difficulties in the minds of medical experts on the question whether insanity was incurable. It would be wrong to define by law as incurably insane a person who had been under treatment continuously for five years when it was admitted by medical science that there was a possibility of a cure even after the patient had been seven years in an institution.—Miss HORSBRUGH said that if this Bill became law without this amendment many persons who were in a state of nervous breakdown, or were even patients in mental hospitals, would be subjected to a tremendous amount of anxiety that they might be divorced, though the disease from which they suffered might be cured. Last year in Scotland 27 married people who had been in institutions for more than five years came out cured, and of those 27 people there were 22 whose husband or wife was still alive.—In answer to a question by Mr. Logan as to whether if a divorce is granted on the grounds set out here, and recovery takes place, the divorced person would be justified in going to the court and asking that the divorce should be rescinded, Mr. COOPER said that that possibility was not open; a divorce decree could not be rescinded.

In the House of Lords on July 13th the Mental Deficiency Bill was read the third time and passed and the Royal Assent was given to the Housing (Agricultural Population) (Scotland) Act and the Children and Young Persons Act.

In the House of Commons on July 13th the Food and Drugs Bill and the Milk (Extension and Amendment) Bill were read the third time. On July 14th in the House of Commons the Holidays with Pay Bill was read a second time.

QUESTION TIME

WEDNESDAY, JULY 13TH

Rheumatic Fever in *Caledonia*

Mr. GALLACHER asked the First Lord of the Admiralty what was the extent of the further outbreak of rheumatic fever amongst the lads in the training ship *Caledonia* at Rosyth; and what steps had been taken to make an examination into the sewage system.

Mr. DUFF COOPER: There have been 31 fresh cases of rheumatic fever amongst the trainees in *Caledonia* since April 1st last, a ratio of approximately 18 per 1000 strength. The sewage arrangements both on board the *Caledonia* and on shore have been under continuous observation by the departments concerned and, except for one temporary breakdown, against the recurrence of which steps have been taken, no deficiency has been reported. The pumps will again be overhauled during *Caledonia's* summer vacation.

Mr. GALLACHER: Will not the Minister arrange to have a special investigation into the sewerage arrangements which could quite easily be dangerous to the lads, and also will he take into consideration the fact that the ship is continually lying in still waters?

Mr. DUFF COOPER: I have had an investigation made and my hon. friend the Civil Lord is there to-day, but I do not think there is any reason to suppose that rheumatism could possibly come from any defects in sewerage.

Abortion Committee's Report

Mr. BOOTHBY asked the Minister of Health whether the committee which was inquiring into the abortion laws had completed its investigations; and when he expected to receive its report.—Mr. BERNAYS, Parliamentary Secretary to the Ministry of Health, replied: I understand that the committee have recently completed the hearing of evidence. They are now engaged in consideration of the evidence and they hope to be in a position to present a report before the end of the year.

THURSDAY, JULY 14TH

Admission of Medical and Dental Refugees

Mr. RILEY asked the Home Secretary if he was granting permits to all alien refugees coming to this country who were qualified doctors or dentists to practise their profession and was also granting permits to all such refugees who were desirous of studying for these professions.—Sir S. HOARE replied: It has always been recognised that a policy of unrestricted admission would be out of the question. Only a small number of foreign practitioners can be absorbed into the medical and dental professions, and it will be necessary to select this number with care. To assist me in making this selection it is proposed that applications shall be examined by a committee on which there will be representatives of the medical and dental professions, and of the refugee organisations.

Mr. RILEY: Is it not a fact that there is a shortage of qualified practitioners in this country, and if that is the case, will the right hon. gentleman give consideration to this matter?—Sir S. HOARE: No, Sir. I am not informed that there is a shortage of medical practitioners in the country.

Mr. MATHERS: Has the right hon. gentleman received intimation of the concern of doctors practising in this country about the numbers who have already been admitted to practise here?—Sir S. HOARE: I have had discussions with representatives of the principal medical organisations, and we both agree that discrimination must be exercised. I think it will be found that we shall be able to admit a limited number and at the same time maintain effective discrimination.

Mr. MANDER: Do we not want to take up as generous an attitude as we can on this matter in accordance with our long national tradition?

No further answer was given.

Sir HENRY MORRIS-JONES asked the Home Secretary whether he had arrived at any decision in regard to the number of medical practitioners of Austrian nationality who might be admitted to this country; and what restrictions, if any, were imposed upon them in connexion with the practice of their profession.—Sir S. HOARE replied: I have been in consultation with representatives of the medical profession and I agree with them that the number of Austrian doctors who can be absorbed into the profession is limited. Before coming to a decision as to a precise figure I should wish to wait until there has been further opportunity of ascertaining how many of the applicants are persons possessing special qualifications, or having special claims to consideration. In reviewing applications consideration will also be given to such questions as what arrangements the applicant proposes to make for acquiring the necessary qualification to practise in this country and in what part of the country he proposes to settle.

Sir H. MORRIS-JONES: Will my right hon. friend bear in mind in his contact with this committee that many of the foreign practitioners are able to practise in this country after a very short period of study, whereas those already in this country have to have a long and expensive course, and some of them might be penalised on that account?—Sir S. HOARE: Yes, certainly; that is a factor that must be taken into account.

Mr. LIPSON: Do the figures of the doctors of foreign nationality who have come to this country justify the anxiety which is felt in some quarters with regard to these doctors being allowed to come here, the majority of whom come because of religious or political persecution?—Sir S. HOARE: I believe that with coöperation between the medical profession, the refugees committee and the Home Office we can reconcile the two needs and afford a refuge to a certain number of refugees without flooding the profession here with doctors who are not required in this country.

Dr. EDITH SUMMERSKILL: Is it not a fact that many doctors in this country believe that the Austrian doctors can make a helpful contribution to medical knowledge in this country?—Sir S. HOARE: Yes, I think that is the fact, and it shows how necessary it is to deal with these applications case by case on their merits.

Dependants of Insured Persons and Medical Benefit

Mr. GRAHAM WHITE asked the Minister of Health if any estimate had been prepared of the cost of providing medical benefit to the dependants of persons insured under the National Health Insurance Acts.—Mr. ELLIOT replied: On the assumption that the term "dependants" is restricted to wives and children up to the school-leaving age, the cost of providing medical benefit to the dependants of insured persons would be about £10,000,000 per annum if the annual charge per head were the same as that now applicable to insured persons themselves.

The Bragg-Paul Respirator

Mr. DAY asked the Minister of Health whether his attention had been called to the broadcast on July 8th asking listeners whether they knew where a Bragg-Paul respirator, or "iron-lung" could be found, to save the life of a child; and, in view of the fact that one could not be found in time and the child died, would he consider providing these instruments from Government funds to several centres of Great Britain in order that they could be obtained at short notice by hospitals.—Mr. ELLIOT replied: I am aware of the incident referred to and regret that a respirator could not be found in this case. A certain number of respirators are already available at hospital centres and my medical officers in their visits of inspection are prepared to advise local authorities upon the question of providing them in suitable centres. Under these circumstances and having regard to the infrequent occasions on which these appliances are required, I fear that the provision by Government funds of a number of such appliances would not be justified.

Medical Examination of Juvenile Delinquents

Mr. CASSELLS asked the Secretary of State for Scotland what instruction had been given by his Department to judges presiding in the Inferior Courts of Scotland quoad the examination of juvenile delinquents by psycho-analysts prior to sentence being imposed.—Mr. WEDDERBURN, Under-Secretary of State for Scotland, replied: No instructions are issued by my right hon. friend to courts in Scotland. It has however been recommended to all courts that on every occasion when there is any suspicion of defect or abnormality a medical and mental examination should be conducted by the most skilful specialist available.

THE LANCET 100 YEARS AGO

July 21st, 1838, p. 582.

From a leading article on the acceptance of the Fellowship of the Royal College of Physicians by two licentiates who had been among the signatories of petitions to the House of Commons denouncing the organisation of the College.

The President of the College is, we understand, disposed to turn his partial success in the camp of the Licentiates to account, as he does not anticipate that the manœuvre can be carried much further or much lower. He has prepared a *petite comedie*, of which the following are the heads:—The renegadoes are to form an allegorical procession at the earliest evening meeting, and to be led as captives in the train of the triumphant President. They will walk backwards into the library of the College, marshalled by Dr. THEODORE GORDON, carrying a lance reversed, while books in several languages, turned inside out, are suspended about the person of Dr. COPLAND, the coats of the other renegadoes being turned, and appropriately decorated. Dr. THEODORE GORDON will then read the petitions of the Licentiates, and after each paragraph solemnly recant and deny its truth, the Fellows responding every time in low recitative:

Dignus, dignus est intrare,
In nostro docto corpore.

MEDICAL NEWS

University of Oxford

On July 16th the honorary degree of D.Sc. was conferred on Dr. Harvey Cushing, emeritus professor of neurology at Harvard University. The following degrees were also conferred :—

D.M.—A. D. C. Bell and R. R. Bomford
B.M., B.Ch.—J. B. Atkins, J. S. Astbury, D. R. Cargill, C. Exell, W. M. Gibson, O. I. Green, J. C. Hewetson, J. G. Jamieson, R. H. Mole, T. E. Ooi, E. B. G. Reeve, T. R. Savage, A. Shannon, R. A. Shawyer, M. A. Slee, J. McD. Teasdale, C. R. B. Welford, Celia K. Westrop, C. W. M. Whitty, L. L. Whytehead, and W. E. Young.

In addition to those who received the degrees of B.M., B.Ch., the following candidates have also satisfied the examiners in the final medical examination :—

W. D. Brinton, G. H. L. Bullmore, L. E. C. Davies, A. W. Frankland, M. W. Hemans, Aurora M. L. Isabella, E. L. James, S. H. Llewellyn-Smith, J. B. Longmore, D. H. Swayne, and R. R. Wethered.

The following candidates satisfied the examiners for the diploma in ophthalmology :—

G. H. Appel, S. E. Bolton, A. C. L. Houlton, M. U. Khan, V. N. Khanna, R. Labhaya, A. R. McKelvie, M. A. Nair, P. C. Sen, and G. L. Trichard.

University of Cambridge

At recent examinations the following candidates were successful :—

D.M.R.E.

Part I.—J. C. A. Liddy.
Part II.—S. J. H. Douglas, Heather D. Dowling, Kathleen M. Henderson, F. B. Kiernander, Mary C. Leishman, Kenneth Lumsden, J. K. Muir, R. S. Padaki, C. N. Pulvertaft, S. J. R. Reynolds, Alice M. Ross, Amnuey Smerasuta, S. El D. H. El Taoudi, Leslie Werbeloff, and M. A. A. Zohdy.

University of London

At recent examinations the following candidates were successful :—

D.R.

E. P. Allen, J. W. D. Bull, A. G. S. Cooper, N. F. C. Hill, D. J. Hurrell, C. W. S. Jerram, Ogilvie Macfeat, B. Y. Mina, J. G. Nel, S. F. Oosthuizen, K. M. Rai, Philippa N. Vaus, and H. H. Winterstein-Gillespie.
Part I.—A. N. Stephanou.

D.P.H.

Samayapala Amarasinghe, P. H. R. Anderson, Annie R. Chalmers, F. C. L. B. B. Crawford, P. A. Crowley, L. D. P. Dharmaratne, C. W. Dixon, R. Y. Dunlop, A. C. Gee, F. W. Gilbert, M. G. Hyder, O. G. Lloyd, G. A. Macgregor, I. M. Macgregor, Morris Markowe, J. S. Minett, Frederick Noronha, P. X. O'Dwyer, D. E. Parry, A. I. Ross, A. F. H. Stewart, Sankara Sivasankara Pillai, James Taylor, Emily S. O. Thomson, S. C. Thurai-Rajah, Melville Watkins, and Helen E. Wight.

Royal College of Surgeons of England

A quarterly meeting of the council was held on July 14th with Sir Cuthbert Wallace, the president, in the chair. Mr. Hugh Lett was elected president for the ensuing year, Prof. G. Grey Turner was re-elected vice-president, and Prof. R. E. Kelly was elected vice-president. Mr. Victor Bonney, Mr. R. C. Elmslie, and Sir Girling Ball were readmitted, and Mr. L. E. C. Norbury was admitted to the council.

Dr. Mahmud Bayumi Bey of Cairo was admitted to the fellowship and the Hallett prize was awarded to Dr. H. H. Eddey of the University of Melbourne. The ninth Macloghlin scholarship was awarded to Frank Batley of the Oldham Hulme Grammar School.

The new regulations for the licence in dental surgery which will become effective gradually as from Oct. 1st were approved, and it was recommended that a post-graduate diploma in dental surgery should be instituted. The following were elected for the ensuing year. Hunterian professors : Mr. George Armitage, gastroscopic observations on the healing of chronic gastric ulcer ; Miss Dorothy Collier, facial paralysis and its operative treatment ; Mr. A. L. d'Abreu, congenital cysts of the lung and pleura ; Mr. F. R. Edwards, experimental pneumonectomy and the development of a two-stage operation for the removal of a whole lung ; Mr. A. J. Gardham, surgery of carcinoma of the mouth and the tongue ; Mr. F. J. S. Gowar, pulmonary lobectomy ; Mr. Cecil Joll, the pathology, diagnosis, and treatment of lymphadenoid goitre ; Mr. J. H. Mulvany, differentiation in the mechanism, symptomatology, pathology, and treatment of the two types of exophthalmos associated with Graves's disease ; Mr. D. W. G. Murray, heparin in thrombosis ; Mr. E. W. Riches, hydronephrosis ; Prof. J. Paterson Ross, effects of radium upon carcinoma of the breast ; and Mr. H. T. Simmons, relapse following sympathectomy. Arris and Gale lecturer : Dr. John Beattie. Erasmus Wilson demonstrators : Mr. R. St. L. Brockman, Mr. Robert Davies-Colley, and Dr. L. W. Proger. Arnott demonstrator : Dr. A. J. E. Cave.

Prof. R. J. S. McDowall was appointed examiner in physiology, and Prof. R. Bramble Green in anatomy at the primary examination for the fellowship to be held early in 1939 at Lahore and Cairo. Dr. Proger was re-appointed pathological curator of the museum ; Sir Frank Colyer, hon. curator of the odontological collection ; and Mr. C. J. S. Thompson, hon. curator of the historical collection. Mr. G. K. Harrison was appointed a Leverhulme scholar for one year and Dr. David Slome was reappointed a Mackenzie Mackinnon research fellow.

Diplomas of fellowship were granted to E. P. Connolly and L. J. Horn (both of Sydney) and a diploma of membership to Chelliah Ponnambalam (Ceylon). Licences in dental surgery were granted to the following candidates :—

R. A. Abbey, Arthur Arundel, J. D. Atkins, A. V. Austen, P. E. Baenziger, L. J. Bickell, R. G. Bird, W. H. Bransom, J. M. Brown, E. J. A. Clarkson, B. C. Clay, F. L. Coldwell, A. K. Comben, P. H. Crampton, J. A. Donaldson, H. D. Freeman, O. H. Godfrey, A. R. Henwood, D. C. Jackson, S. G. Miron, L. J. Moir, W. S. Palin, S. W. Pearks, B. T. C. Probert, L. A. G. Quick, Vernon Rattee, D. A. Rogers, J. M. Ross, C. E. Sharland, W. E. Simon, A. L. Sykes, and I. M. Westworth.

The following diplomas were granted, jointly with the Royal College of Physicians :—

D. A.—Wesley Bourne, S. M. Campbell, A. L. Flemming, P. V. Francis, Samuel Johnston, H. J. Shields, and C. C. Stewart.
D.P.H.—R. H. Barrett, Christopher Crowley, F. R. Glover, J. C. Hogarth, N. D. Karani, Susan MacMahon, A. W. McRorie, James Marshall, Basil Roberts, Charlie Seeley, C. G. K. Thompson, and P. W. Vilain.
D.P.M.—M. J. Brookes, Benedict Finkleman, J. F. R. Goodlad, R. K. Grossart, C. R. Harris, Cedric Holmes, A. A. Huse, Alexander Leitch, J. P. McGuinness, R. L. Moody, R. B. Morton, E. K. Mulinder, J. E. Saville, Sydney Sharman, Alan Stoller, V. H. Tompkins, and Betty M. Zeal.
D.L.O.—R. H. B. Bettington, B. K. Kapur, K. M. Mayall, D. G. Phillips, I. M. Robertson, R. A. Syed, and Ren^ Thomas.

National University of Ireland

On July 9th, at University College, the following degrees and diplomas were conferred :—

M.D.—O. T. D. Loughnan and T. P. O'Connor.
M.B., B.Ch., B.A.O.—R. A. MacCarthy, Ellen Murphy, W. J. Twohig, R. G. Barry, A. S. Beare, M. F. Beckett, C. J. Clohessy, M. M. Conran, Mary Corbett, Meadhbh Cronin, G. R. Cubitt, Paul Farrell, James FitzGerald, Loretto Kelly, Mary Lawton, John Lucey, D. J. R. McConvell, Josephine C. Murphy, Noel Newman, C. P. O'Connell, Peter O'Flynn, Patrick O'Keeffe, Mary F. O'Leary, J. G. Paton, Eileen L. Quinlan, M. F. Ronayne, and R. H. Watson.
D.P.H.—V. J. Dillon and T. P. P. O'Riordan.
B.Sc., P.H.—T. P. P. O'Riordan.

University of Dublin

At recent examinations in the School of Physic, Trinity College, the following candidates were successful :—

M.D.

W. B. Roantree and C. G. S. van Heyningen.

M.A.O.

D. P. Harris.

FINAL MEDICAL EXAMINATION FOR M.B., B.CH., AND B.A.O.

Therapeutics and pathology.—Louis Solomon and John Moore (first-class honours) ; E. C. J. Millar and David Aiken (second-class honours) ; J. H. Acton, G. H. Blennerhassett, J. T. Hanna, Caroline A. McEvett, D. L. Harbinson, M. A. Majekodunmi, R. St. C. Mooney, J. M. Taylor, D. R. McCaully, R. J. S. Wilson, Phoebina Eakins, H. J. Smith, I. M. Ali G. E. P. Kelly, P. F. Longford, J. R. Healy, W. M. Winn Isabel M. Woodhouse, E. G. W. Lynch, Gilbert Tattersall, B. E. R. Solomons, A. E. Tinkler, H. K. Bourns, D. S. M. Enraght-Moony, and Einhart Kaweran.
Medicine.—G. E. Nevill, F. H. Counihan, T. L. Lawson, R. T. Burkitt, Isabella M. Dorman, Simon Sevitt, and H. A. Dougan (second-class honours) ; R. W. Temple, Brian Mayne,

F. D. F. Steede, Elizabeth M. Rees, Deborah Bloom, D. B. Taylor, R. J. Grove-White, W. W. McGrath, Robert Wilson, Muriel Elliott, F. W. Parke, S. L. Wray, T. W. Buckley, Mary C. Conlin, J. R. Mahon, D. K. Stewart, Emily E. E. E. Hill, G. D. Stevenson, E. W. R. Hackett, H. R. T. Devlin, M. F. X. Slattery, W. C. Good, D. E. Meares, M. E. C. Balmer, J. W. Cathcart, D. M. R. Barry, R. J. Balfe, J. C. de. R. Sugars, L. A. S. Edmondson, and J. P. Condon.

Surgery.—G. E. Nevill, H. A. Dougan, R. T. Burkitt, T. L. Lawson (first-class honours): Isabella M. Dorman, W. C. Good, Brian Mayne, J. C. de R. Sugars, R. J. Grove-White, and D. B. Taylor (second-class honours); Elizabeth L. J. Ryan, F. H. Counihan, Robert Wilson, J. R. Murdock, W. W. McGrath, J. G. Waugh, Muriel Elliott, D. M. R. Barry, Deborah Bloom, R. W. Temple, C. M. Ludlow, W. A. J. Pike, F. D. F. Steede, T. W. Buckley, E. W. R. Hackett, J. T. Speidel, Mary C. Conlin, and G. D. Stevenson.

Midwifery.—Simon Sevitt, Myer Herman, L. S. Levinson, and Isabella M. Dorman (second-class honours); Mary A. Conyngham, V. T. Williams, J. L. Handelman, Bernard Kernoff, J. R. Mahon, Elizabeth M. Rees, Sylvia M. FitzGerald, William Sandford, Lily H. Bamber, Edward Cullen, F. R. T. Hollins, W. B. Welply, E. R. F. Mellon, F. G. Millar, H. J. F. Draffin, Elizabeth L. J. Ryan, and Rosaleen de C. McCormick.

DIPLOMA IN GYNÆCOLOGY AND OBSTETRICS

P. M. Bloom, A. E. A. E. El-Tawil, Maurice Mishriki, S. C. Werch, O. K. Khallaf, Achamma Thomas, Woon-Nin Chau, Y. Y. Azachey, and G. B. Kabraji.

DIPLOMA IN PUBLIC HEALTH

Part II.—W. A. Gillespie, Francis Keane, Charlotte F. Pike, Eveleen M. H. Scott, B. P. P. Berney, G. H. B. Roberts, R. A. Heatley, and Alphonsus Dolphin.

The surgical travelling prize, the bicentenary memorial prize, and the Edward Hallaran medal have been awarded to Dr. G. N. MacFarlane, the Dr. Henry Hutchinson Stewart Scholarship in mental diseases to Dr. J. E. Gillespie, and the De Renzy centenary prize to Dr. Eveleen M. H. Scott.

Royal College of Physicians of Edinburgh

The Dr. Jessie Macgregor prize in medical science has been awarded to Dr. Susanne Paterson (Edinburgh) for her work on the therapeutic uses of progesterone. The value of the prize is £50.

University of Manchester

Dr. C. S. D. Don has been appointed lecturer in medicine for dental students; Mr. A. H. Southam lecturer in surgical pathology, Mr. R. L. Newell lecturer in operative surgery, Dr. R. W. Fairbrother special lecturer in bacteriology, and Dr. I. W. Ball, demonstrator in anatomy.

International Medical Congress for Psychotherapy

The tenth International Medical Congress for Psychotherapy will be held at Oxford from July 29th to August 2nd under the presidency of Prof. C. J. Jung. The main theme of the congress is to be psychology of the various phases of life, and another subject for discussion will be psychotherapy and psychosomatic problems. Details of the programme will be found in our Medical Diary. Until July 28th the office of the congress will be at 106, Brompton-road, London, S.W.3.

Osler Club

The Osler Club of London met at the Langham Hotel on July 12th, to hear Dr. Archibald Malloch deliver the eleventh Oslerian oration. Thirty-six "oslerians," "oslerolaters," and their friends dined and honoured in silence the toast of the memory of Sir William Osler, on the occasion of the 89th anniversary of his birth. Dr. Malloch recounted the story of Osler's life and work in a happily personal way that made him live again. Among those who spoke were Dr. Harvey Cushing, S. Damian, Dr. A. C. Klebs, Mr. R. H. Hill, and Dr. Charles Singer.

Voluntary Hospitals Emergency Bed Service

It has now been found possible to extend the benefit of this service to doctors in the home counties, of whom 9000 were informed last week that the service is prepared to find beds for emergency and acute cases (in voluntary hospitals only) at any time between 8 A.M. and 10 P.M. on weekdays and 9 A.M. and 10 P.M. on Sundays and Bank Holidays. The experience of the first few weeks has shown that (1) the supply of beds has been adequate to deal with all the cases offered; (2) it seldom takes more than a few minutes to obtain a bed for any case; and (3) much time is saved where doctors, in giving the required information, follow clearly the procedure outlined on the card sent to them.

London Fever Hospital

The new isolation block of this hospital will be open for inspection from 3 P.M. to 6 P.M. during the week ending July 30th, and the committee of management and the medical staff invite all medical practitioners to visit it. They are asked to call on the resident medical officer of the hospital, Liverpool-road, N. The new block was described on p. 163 of our last issue.

Medical Candidates for the Irish Senate

Our Dublin correspondent writes: The list of candidates nominated for the election of the Senate of Ireland, other than the University candidates, contained the names of four members of the medical profession. The Royal College of Surgeons, the only medical body which has a right of nomination, has put forward the names of Prof. T. G. Moorhead and Mr. R. C. Stoney for the cultural and educational panel; Dr. Patrick Doyle, of Shinrone, Offaly, has been nominated for the same panel by members of the Dail. The fourth medical candidate is Lieutenant-Colonel F. F. MacCabe, who has been nominated for the industrial and commercial panel. The nominations for election by the universities are not made at the time of writing, but there is certain to be one medical candidate for Dublin University, and there will probably be two for the National University.

Voluntary Hospitals Committee for London

This committee has recently extended its area, and the following new officers have been elected: Mr. Oliver N. Chadwyck-Healey (chairman), Dr. A. M. H. Gray (vice-chairman); Lord Annaly (treasurer); and Mr. A. G. L. Ives (secretary). The following medical members have been elected by the hospitals:—

Hospitals with undergraduate schools.—Dr. H. E. A. Boldero, Prof. L. S. Dudgeon, Dr. Geoffrey Evans, Dr. A. M. H. Gray, Mr. Norman Lake, and Sir Charles Wilson.

Hospitals without undergraduate schools.—Mr. Percival Cole, Dr. T. A. Matthews, Mr. F. D. Saner, Dr. C. E. Sundell, and Sir John Weir.

Special hospitals.—Dr. Reginald Jewesbury, Mr. J. Swift Joly, Mr. Harold Kisch, Mr. J. V. O'Sullivan, and Mr. L. Carnac Rivett.

Appointments

ALLISON, P. R., Ch.M. Leeds, F.R.C.S. Eng., Hon. Surgeon to Leeds Public Dispensary.

BACK, FREDERICK, M.B. Lond., D.P.M., Medical Superintendent at Cherry Knowle (Sunderland County Borough Mental Hospital).

BARNES, C. G., M.D., M.R.C.P. Lond., Hon. Assistant Physician to Queen Charlotte's Maternity Hospital.

BEEMER, A. M., M.R.C.S. Eng., Third Assistant Pathologist at St. Mary's Hospital, Paddington.

CLARK, WILLIAM, M.B. Glasg., D.P.H., Assistant School Medical Officer for Middlesbrough.

EVANS, JENNET, M.B. Liverp., Woman Assistant Medical Officer for Rhondda.

GREIG, ALEXANDER, M.B. St. And., Resident House Surgeon at the Royal Manchester Children's Hospital, Pendlebury.

HARNETT, W. L., M.D. Camb., F.R.C.S. Eng. (Lt.-Col. I.M.S. retd.), Medical Secretary to the Clinical Cancer Research Committee of the British Empire Cancer Campaign.

LYLE, J. S., M.B., F.R.C.S. Edin., Resident Surgical Officer at the Royal Infirmary, Bradford.

MARKOWE, MORRIS, M.B. Lond., D.P.H., Assistant Medical Officer of Health for Ipswich.

MARSDEN, ELIZABETH A., M.B. Aberd., Assistant Medical Officer of Health and Assistant School Medical Officer for Aberdare.

MCQUISTON, J. W., L.D.S., School Dental Surgeon for Middlesbrough.

MCWHIRTER, J. G., M.B. Glasg., D.M.R., Radiologist to the Victoria Infirmary, Glasgow.

MICHIE, WILLIAM, M.B. Aberd., Surgical Registrar at Royal Infirmary, Aberdeen.

OWEN, W. M., M.B. Lond., Resident Medical Officer at the Radium Institute, London.

SNELL, W. E., M.D., M.R.C.P. Lond., D.P.H., Resident Medical Superintendent at Colindale Hospital (L.C.C.).

SHINE, T. F., M.B. N.U.I., Clinical Assistant at the Royal Hospital, Sheffield.

General Hospital, Northampton.—The following appointments in the department of psychological medicine are announced:
HAYES, E. D. T., M.D. Dubl., D.P.M., Hon. Physician;
TENNENT, THOMAS, M.D. Glasg., M.R.C.P. Lond., D.P.H., D.P.M., Hon. Physician;
KEANE, C. A., M.R.C.S. Eng., D.P.M., Hon. Assistant Physician; and
O'CONNELL, D. J., M.D. N.U.I., D.P.M., Hon. Assistant Physician.

Certifying Surgeons under the Factories Act: Dr. T. E. FLITCROFT (Tyldesley District, Lancashire).

Medical Diary

July 26th to August 1st

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

INTERNATIONAL MEDICAL CONGRESS FOR PSYCHOTHERAPY

SATURDAY.—9.30 A.M. (Taylor Institution, Oxford), Prof. C. G. Jung (Switzerland): Presidential address. Dr. A. Groeneveld (Holland): Early Childhood and its Mechanisms. Dr. F. Künkel (Germany): Das 'Wir' als Faktor in der Heilpädogogik. 2 P.M., Dr. Margaret Lowenfeld: The Theory and Use of Play in the Psychotherapy of Childhood. Dr. C. Boenheim: The Scope of Child Psychotherapy. Dr. J. H. Van der Hoop (Holland): Analytic and Synthetic Processes in the Different Phases of Life. Dr. J. M. Rombouts (Holland): Psychotherapy and the Development of Personality. 4.30 P.M., Dr. H. Flanders Dunbar (U.S.A.): The Psychosomatic Problem: techniques of history-taking, examination, and therapy. Dr. E. Wittkower: Personality Studies in Ulcerative Colitis.

SUNDAY.—2.30 P.M., Dr. William Brown: Psychological Problems of the Mature Personality. Dr. A. Repond (Switzerland): Le Démon de Midi. Dr. Karin Stephen: The Development of Infantile Anxiety. 5 P.M., Dr. G. R. Heyer (Germany): Die Leib-Seele-Einheit. Dr. H. Reistrup (Denmark): Spiritualistic phenomena and the Psychoneuroses. Prof. G. Schmaltz (Germany): Die Konstellation des Mittelpunktes als innere Aufgabe der zweiten Lebenshälfte.

MONDAY.—9.30 A.M., Dr. Emanuel Miller: Importance of the Diagnosis and Treatment of Adolescent Disorders. Dr. Ira S. Wile (U.S.A.): Open Clinic Treatment for Problems of Juvenile Behaviour. Dr. H. von Hattingberg (Germany): Love as a Process of Maturation. Dr. F. Völgyesi (Hungary): Stage Fright and Neuroses in Professional Life. 2 P.M., Dr. G. Gáli (Hungary): The Influence of Tuberculosis on the Psychic Life of the Patient. Dr. B. Stokvis (Holland): Die Bedeutung der Psychotherapie bei Kreislauf-kranken. Dr. F. Pollak (Czechoslovakia): Zur Hysteriefrage. Dr. H. Neugarten (Germany): Psychotherapeutische Wandlungen und religiöse Wiedergeburt. 4.30 P.M., Dr. A. T. M. Wilson: The Psychogenic Factor in Hæmatemesis. Dr. D. Annau (Yugoslavia): Psychotherapeutische Möglichkeiten bei organischen Nervenkrankheiten. Dr. Clifford Allen: The Relation of the Psyche to the Endocrine Glands. Prof. Jung: presidential summary.

BRITISH POSTGRADUATE MEDICAL SCHOOL, Ducane-road, W.

TUESDAY.—4.30 P.M. (North-Western Hospital), Dr. W. Gunn: Clinical Examination of Fever Cases and Demonstration of Modern Methods and Apparatus.

WEDNESDAY.—Noon, clinical and pathological conference (medical). 3 P.M., clinical and pathological conference (surgical).

THURSDAY.—2.15 P.M., Dr. Duncan White: radiological demonstration.

FRIDAY.—2 P.M., clinical and pathological conference (obstetrics and gynæcology).

Daily, 10 A.M. to 4 P.M., medical clinics, surgical clinics and operations, obstetrical and gynæcological clinics and operations.

ST. GEORGE'S HOSPITAL, S.W.

THURSDAY.—5 P.M., Dr. Desmond Curran: psychiatric demonstration.

Vacancies

For further information refer to the advertisement columns

Aylesbury, Royal Buckinghamshire Hosp.—Jun. Res. M.O., at rate of £150.

Belfast Royal Maternity Hosp.—Res. M.O. in charge Rea block, at rate of £100. Also Res. M.O., at rate of £52.

Bexley Borough.—Asst. M.O.H., £550.

Birmingham, Little Bromwich Hosp. for Infectious Diseases.—Two Jun. Res. M.O.'s, each £300.

Blackburn Royal Infirmary.—Res. Surg. O., £250.

Bradford Royal Infirmary.—H.P. to Radium and Skin Depts., at rate of £175.

Brighton, New Sussex Hosp. for Women, Windlesham-road.—H.S., at rate of £100.

Brighton, Royal Sussex County Hosp.—H.S., £150.

Bristol University.—Sen. Bacteriologist, £700.

Burnley, Municipal General Hosp.—Jun. Res. M.O., at rate of £150.

Burton-on-Trent General Infirmary.—Cas. O. and H.P., £150.

Cardiff City Isolation Hosp.—Asst. Res. M.O., £250.

Cardiff Royal Infirmary.—Res. M.O., £200.

Carlisle, Cumberland Infirmary.—H.P. and H.S., each at rate of £160.

Charing Cross Hosp., W.C.—Clin. Asst. in X Ray and Electrotherapeutics Dept., £50.

Chesterfield and North Derbyshire Royal Hosp.—H.S. to Ophth. and Ear, Nose, and Throat Depts., at rate of £150.

Colchester, Essex County Hosp.—Asst. H.S., £120.

Coventry City.—Asst. School M.O., &c., £600.

Deal, Victoria Hosp.—Res. M.O., at rate of £150.

Derbyshire County Council.—County Bacteriologist and Pathologist, £750.

Dudley Guest Hosp.—Res. Surg. O., £250–£300. Also two H.S.'s, each £100–£130.

Durham County Council.—Asst. School M.O., £500.

Eastbourne Royal Eye Hosp., Pevensey-road.—H.S., at rate of £100.

General Lying-in Hosp., York-road, S.E.—Registrar.

Herefordshire General Hosp.—Res. Surg. O., £150.

Huntingdon County.—Asst. County M.O.H. and M.O.H., £800.

Inverness, Royal Northern Infirmary.—H.P., at rate of £150.

Kendall, Westmorland County Hosp.—H.S., at rate of £200.

Kettering and District General Hosp.—H.P., £150.

King's College Hosp., S.E.—Biochemist, £500.

King Edward Memorial Hosp., Ealing.—Cas. O. and Deputy Res. M.O., at rate of £225.

Lancaster Royal Infirmary.—H.S., at ra te of £130.

Leamington Spa, Warneford General Hosp.—Res. Cas. O. and H.S., at rate of £150.

Leicester City General Hosp.—Res. M.O., at rate of £300.

Leicester Royal Infirmary.—Vacancies, £150–£100.

Liverpool Royal Children's Hosp.—Hon. Asst. Radiologist.

London Chest Hosp., Victoria Park, E.—H.P., at rate of £100.

London County Council.—Asst. Pathologist, £650.

Maidstone, West Kent General Hosp.—H.S., £175.

Manchester, Ancoats Hosp.—H.S., also H.S. and H.P. combined, each at rate of £100.

Manchester City Education Committee.—Asst. School M.O., £600.

Manchester, Crumpsall Hosp.—Res. Surg. O., £400.

Manchester Ear Hosp.—Res. H.S., at rate of £120. Also Non-res. H.S., at rate of £150.

Manchester Northern Hosp.—Res. Surg. O., £150.

Manchester Royal Eye Hosp.—Jun. H.S., £120.

Manchester Royal Infirmary.—Jun. Asst. M.O. in Radiological Dept., £350. Chief Asst. to Medical Neurological Unit, £300. Also Res. M.O. for Private Patients' Home, £250.

Metropolitan Hosp., Kingsland-road, E.—Cas. O. and Res. Anæsthetist, £100.

Mildmay Mission Hospital, Austin-street, E.—Asst. Cas. O., at rate of £125.

New Zealand Public Hosp., Greymouth.—Surgeon, £800.

New Zealand Royal Society for the Health of Women and Children. Medical Adviser to Dominion Council, £1200.

Newcastle General Hosp.—Asst. Radiologist in charge of Deep Therapy Dept., £500.

Newcastle-upon-Tyne, Royal Victoria Infirmary.—Jun. Surg. Reg., £150.

Newcastle-upon-Tyne Hosp. for Sick Children.—H.P. and H.S.'s, at rate of £100.

Oxford County and City Mental Hosp.—Second Asst. M.O., £500.

Oxford, Wingfield-Morris Orthopædic Hosp., Headington.—Lord Nuffield Scholarship in Orthopædic Surgery, £200.

Portsmouth, St. Mary's Municipal Hosp.—Jun. Asst. Res. M.O., £250.

Portsmouth Royal Hosp.—H.P. and Cas. O., each at rate of £130.

Princess Louise Kensington Hosp. for Children, St. Quintin-avenue, W.—Hon. Asst. Physician, &c.

Prison Commission, Home Office, S.W.—M.O., Class II, £800.

Queen's Hosp. for Children, Hackney-road, E.—H.S. Also two Cas. O's, each at rate of £100.

Radium Institute and Mount Vernon Hosp., 1, Riding House-street, W.—H.S. for Mount Vernon Hosp., at rate of £150.

Reading, Battle Hosp.—Res. Asst. M.O., £300.

Redhill, East Surrey Hosp.—Jun. H.S., at rate of £100.

Renfrew County Council.—County M.O., £1200.

Rochdale, Birch Hill Hosp.—Jun. Res. M.O., at rate of £225.

Rotherham County Borough Medical Services Committee.—Asst. M.O., £300.

Rotherham Hosp.—Cas. H.S., £150.

Royal Air Force—M.O.'s.

Royal London Ophthalmic Hosp., City-road, E.C.—Out-patient Officer, £100.

Royal Naval Medical Service.—M.O.'s.

Salford, Infectious Diseases Hosp.—Jun. Asst. Res. M.O., £200.

Salford Royal Hosp.—Radiologist, £300.

Sheffield Royal Infirmary.—Clin. Asst. to Ophth. Dept., £300.

Southampton Children's Hosp. and Dispensary for Women.—Res. M.O., at rate of £150.

Stafford, Prestwood Sanatorium.—Jun. Asst. M.O., at rate of £300.

Stalybridge Borough.—M.O.H., &c., £800.

St. John's Hosp., Lewisham, S.E.—Res. Cas. O., at rate of £100. Also Clin. Asst. to M.O. in charge of Electrical and Massage Dept., £50.

St. Mary's Hosp., W.—Casualty Physician, at rate of £150.

Surrey County Sanatorium, Milford.—Jun. Asst. Res. M.O., at rate of £250.

Truro, Royal Cornwall Infirmary.—H.S., £170. Also Hon. Phys.

West Bromwich County Borough.—Asst. M.O.H. and Asst. School M.O., £500.

West London Hosp., Hammersmith, W.—Hon. Physician for Psychological Medicine.

Winchester, Royal Hampshire County Hosp.—H.S., at rate of £100.

Wimbledon Hosp., Thurstan-rd., S.W.—Res. M.O., at rate of £150.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Bilston (Staffordshire), Cwmbran (Monmouth), Egremont (Cumberland), Falmouth (Cornwall), Week St. Mary (Cornwall), Gorebridge (Midlothian), Kirkwall (Orkney), Ottery St. Mary (Devon), Saltley (Warwick), and Bacup (Lancashire).

NOTES, COMMENTS, AND ABSTRACTS

MALARIA RESEARCH AT HORTON

WHEN a female mosquito becomes infected with malaria its risk to man depends on two factors, the degree of its infectivity, and the length of time it lives in the infective state. Lieut.-Colonel J. A. Sinton, Mr. P. G. Shute, and Lieut.-Colonel S. P. James have investigated these factors in *Anopheles maculipennis atroparvus* at the Ministry of Health malaria laboratory at Horton[1].

Their work has been mainly concerned with *Plasmodium vivax* of the Madagascar strain—so called because it was originally isolated from a lascar off a ship that had come from that island, though the infection may well not have been acquired there—which has been widely distributed from Horton to many European laboratories. The likelihood that one of these mosquitoes will become infected by feeding on a person parasitised by this strain is measurable by the number of male gametocytes which exflagellate in 1 c.mm. of that person's blood; the lowest number which causes infection is six, but when the blood is to be used for therapeutic transmission through the mosquito 200 are used if possible, for with as many as this infection may be expected in 90–100 per cent. of persons after a single feed by mosquitoes. The life-span of these insects varies greatly, as would be expected, with environment and feeding. For example, when in laboratory conditions mosquitoes were kept in incubators the percentage which lived for the ten days necessary for them to become infective with this plasmodium was 34·3; when they were kept in cages in what was in effect an incubator room it was 73·3. In wild insects caught in September and October, and then kept in laboratory conditions, the survival-rate was highest; in those caught in May it was lowest; but in insects bred and kept in the laboratory there were no such seasonal differences. Frequent blood meals appeared to lengthen life, and ovarian development and parturition to shorten it. The expectation of life lessened with age and with every increase of temperature over 22° C. The most favourable climatic feature was a moderate humidity, high and low degrees being inimical. In contrast to the findings of P. H. Bahr[2] with *Microfilaria bancrofti* this malarial infection, even when heavy, had no certain effect on the insect's life-span; if there was any such effect it seemed to fall on those already weakened by some other cause.

Sinton[3] describes how this knowledge is applied to the transmission of therapeutic malaria. In general his procedure consisted in the feeding on suitably infected persons of 100 to 200 mosquitoes enclosed, by batches of 30, in wide jars with mosquito-netted mouths. Unless a further infective feed was felt to be necessary, those that had fed were released into cages in which a rabbit with a shaven patch on its back provided a nightly blood meal for those that desired it. The infected insects, when stored in the hot room, usually remain highly infective for a month. When there is a demand for them 15 to 20 are starved for 48 hours and are taken in a feeding jar, safely enclosed in case of breakage, and handed over to the medical man for application to the outside of the patient's thigh. Those that have fed are dissected on return to the laboratory, to establish the presence of sporozoits in their salivary glands. The primary malarial attack commonly shows itself in a fortnight. If blood itself is used for the transmission of malaria it is drawn into a syringe free from antiseptic, defibrinated, filtered, packed, and sent in ice if it will be longer than 18 hours on the journey. After warming to body temperature it is injected into a muscle in the subscapular region and dispersed by massage.

In special circumstances other species of plasmodium have been used in the treatment of general paralytics. This treatment has lengthened their life, while its effect on body and mind has ranged from none to apparent complete recovery. Sinton adds this serious warning. "As however malaria itself may cause or hasten death, its administration should be attended with unremitting care."

[1] A report on the longevity of mosquitoes in relation to the transmission of malaria in nature. By Lieut.-Colonel J. A. Sinton, V.C., M.D., I.M.S., and P. G. Shute, F.R.E.S., *Rep. pub. Hlth med. Subj., Lond.* No. 85. 1938. H.M. Stationery Office. Pp. 45. 9*d*.

[2] Bahr, P. H. (1912) Filariasis and elephantiasis in Fiji. Suppl. No. 1 of *J. Lond. Sch. trop. med.*

[3] A report on the Provision and Distribution of Infective Material for the Practice of Malaria-therapy in England and Wales. By Lieut.-Colonel J. A. Sinton, V.C., M.D., I.M.S. *Rep. publ. Hlth med. Subj., Lond.* No. 84. 1938. H.M. Stationery Office. Pp. 22. 6*d*.

INFORMATION FROM AND FOR HOSPITALS

DURING the first half of 1938 the Central Bureau of Hospital Information has issued a dozen memoranda[1] on matters of interest to those concerned in one way or another with hospital administration. No. 115 details the staff normally present when major operations are performed at provincial hospitals with less than 100 beds. It ranges from four—namely, surgeon and anæsthetist, theatre sister and assistant nurse—to as many as nine—surgeon, assistant surgeon, patient's private medical attendant, matron, theatre sister, two registered nurses, and two assistant nurses (a veritable field-day for one hospital with 18 beds). Six appears to be the most popular attendance. No. 116 gives some particulars of ceiling coverings and ventilation in use in kitchens. No. 117 reports that fifteen out of sixteen hospitals find cork tile flooring easy to keep clean, attractive, well wearing, and silent, and No. 124 on the whole speaks favourably of dish-washing machines, though without crediting them with much reduction in breakages. Nos. 118, 121, and 122 give some particulars of nursing staff—their minimum age of entry, dual examination requirements, hours, and wages. The last item concerns provincial voluntary hospitals with 100 or more beds, and it appears that many of them have increased the salaries of their senior posts since 1935 but have not changed the cash emoluments of probationers. The Factories Act, 1937, lays down more stringent requirements which are referred to in Memorandum No. 119 prepared for the Bureau by Mr. W. E. C. Baynes of the Inner Temple. Hospitals which are not already affected by existing Acts are, he says, most unlikely to be engaged in any activity which will bring them within the scope of the new Act. The undertakings which come within the scope of the Act are laundries, electrical power houses, and laboratories or workshops where medical or surgical requirements or other articles are manufactured for sale. The Act applies, of course, only to the premises where these activities are carried on. The Home Office is preparing an official abstract of the Act which will give hospitals the information they will require. No. 123 gives some particulars of the treatment of children, age limits for admission to children's wards, and so forth. In No. 125 eleven hospitals report that no serious adverse effect upon surgical instruments or sterilisers has been noticed since the installation of a water-softening plant. No. 126 contains a first list of specifications of the standardisation committee of the British Hospitals Association and deals with bandages, blankets, cotton-wool, gauze, sheets, lint, medicine bottles, soaps, and waterproof rubber sheeting. An addendum to No. 47 enables the weak in arithmetic to learn without trouble the amount a hospital may recover from the Inland Revenue on subscriptions paid under a seven-year covenant.

[1] Copies of these memoranda can be obtained from the Director of the Bureau, 12, Grosvenor-crescent, London, S.W.1. Nos. 115, 123, 126, 2*d*. each, post free, 12 copies 2*s*. Nos. 116, 117, 118, 119, 121, 122, 124, and 125, 2*d*. each, post free, 12 copies 1*s*. 6*d*.

THE APPLICATION OF ASTRINGENTS ON A RECTAL PLUG IN THE TREATMENT OF HÆMORRHOIDS

Dr. E. F. ST. JOHN LYBURN writes: In THE LANCET of Jan. 15th (p. 141) I described a rectal plug, which is now made by Down Brothers, for the application of pressure in the injection treatment of hæmorrhoids and prolapsus ani. The plug (see Figure) has now been altered slightly, and British Drug Houses have made a glyco-gelatin base plaster of low melting-point for use round the neck of the plug in the treatment of early hæmorrhoids and anal discomfort. This plaster is easily applied, and when the plug is removed the old plaster can be taken off and new plasters applied for further treatment as necessary.

The glyco-gelatin base has astringents incorporated in it, and British Drug Houses are carrying out further experiments with bismuth subgallate, hamamelis, and other medicaments for use in this plaster. The plaster I have used, with very definite success, had 2 per cent. silver nitrate incorporated in the base; this did not completely melt until six hours after insertion. The plug is easy to insert with a little cream, and it is a painless operation for the patient to press the neck of the plug with the plaster into the anal sphincter. The astringent is then continuously in contact with the hæmorrhoidal area for a period of six hours, and a pressure sclerosis of the hæmorrhoids takes place through the contraction of the anal sphincter on the neck of the plug and the astringent plaster.

This treatment of a common complaint will be found a distinct advance on the methods at present in vogue.

FOREL'S CAMPAIGN AGAINST ALCOHOLISM

Auguste Forel and his work on alcoholism were the subject of an address by Dr. J. D. ROLLESTON to the Society for the Study of Inebriety and Drug Addiction on July 12th, Mr. Arthur Evans, the president, being in the chair. After a short account of his life (1848–1931) Dr. Rolleston said that though an active campaign against alcoholism had previously been carried out for many years in this country and the United States, Forel was a pioneer in the scientific anti-alcoholism movement not only in Switzerland, his fatherland, but on the Continent as a whole. He devoted no considerable monograph to the subject, to be compared in size and extent to his works on the sexual question or hypnotism, but his publications on the various aspects of alcoholism were extremely numerous. The lack of recognition of his work in this country was attributed by Dr. Rolleston first to the fact that Forel was strongly opposed to making the campaign against alcoholism inseparable from religion, as it was in Anglo-Saxon countries, and secondly to the severe blow to Anglo-Saxon prudery and obscurantism caused by his classical work on the sexual question. On the other hand his work won high appreciation in foreign countries.

The campaign against alcoholism formed only a part of Forel's manifold activities which he himself classified under the following headings: (i) ants; (ii) other insects, such as caterpillars, wasps, and beetles; (iii) anatomy of the brain; (iv) comparative physiology; (v) psychology; (vi) hypnotism; (vii) philosophy; (viii) anthropology; (ix) sociology; (x) pathology; (xi) psychiatry; (xii) anti-alcoholism; (xiii) cacogenesis. The marvellous energy displayed in so many fields of intellectual activity recalled the versatility shown by another great figure in the campaign against alcoholism, Sir Benjamin Ward Richardson, of whom it had been said that his powers were spread over too wide a field to produce the effect of a more restricted effort. On the other hand had Forel concentrated his powers on a single department of research, he would, as Sir Clifford Allbutt said of Richardson, have been a less interesting and probably a less useful man.

HOLIDAYS FOR WORKING WOMEN

A LETTER reaching us from the Women's Holiday Fund states that last year 1499 women and 821 babies and children (under five years of age) enjoyed holidays through the help of the Fund. Many more could be assisted if money were available. "The sight of any popular seaside resort during the summer months, with its crowded beaches and promenades, may suggest that most people are able to take a holiday, even though it may be for only a week. This is far from being the case, as those who have first-hand knowledge of the conditions of life in such overcrowded districts as Southwark, Bethnal Green, and Haggerston are only too well aware. Moreover, it is the wife and mother of the family, needing, and sometimes desperately needing, some relief not only from the hard toil of her daily life but from its anxieties and monotony, who has the least opportunity of having a holiday.... The women contribute what they can towards the cost of a holiday—usually saving up weeks beforehand—but a considerable sum has to be raised in addition. A donation of £2 will enable the society to give a fortnight's holiday to one woman, and £2 10*s.* will pay for a woman and baby. Donations large or small—and we would welcome a large number of subscribers of small sums—should be sent to Miss G. Cooper, Women's Holiday Fund, Denison House, Vauxhall Bridge-road, London, S.W.1."

The appeal is signed by the Bishop of London, the Dowager Countess of Leven and Melville, Sir George Blacker, F.R.C.S., the Rev. Father Devas, the Rev. J. Scott Lidgett, and Mrs. Alfred Loder.

HEARING-AIDS IN L.C.C. SCHOOLS.—Hearing-aids have been provided in all the London County Council's schools for the deaf, and it is proposed that a course of five lecture demonstrations on these shall be given to teachers of the deaf. The lecturers will be Mrs. I. R. Ewing, reader in the department of education for the deaf in Manchester University, and her husband, Mr. A. W. G. Ewing, Ph.D.

Births, Marriages, and Deaths

BIRTHS

LITTLE.—On July 14th, at Dudley, the wife of Dr. Douglas Leigh Little—a son.

MCLAUGHLIN.—On July 14th, the wife of Mr. Redmond McLaughlin, F.R.C.S., of Guildford—a son.

WILLIS.—On July 12th, at Sutherland-avenue, W., the wife of Dr. Saxby Willis—a son.

MARRIAGES

BARR—BRAIN.—On July 14th, at the Clark Memorial Church, Largs, John Stoddart Barr, M.B., F.R.A.C.S., to Nancy Sheila, daughter of Mr. and Mrs. W. A. Brain, of Hobart.

BARRY—LENNOX PERCY.—On July 16th, at the Church of St. George and St. Patrick, Tidworth, Major Gerald Hugh Barry, M.B., R.A.M.C., to Irma Percy.

BOLAM—SADLEIR.—On July 9th, at St. Andrew's Church, Kingswood, Robert Mason Bolam, M.D., to Elizabeth Christine May Sadleir.

SCOTT—JOHNSTON.—On July 14th, at Heworth Parish Church (Durham), Capt. Robert Weden Scott, M.B., R.A.M.C., to Evelyn Margaret Johnston.

DEATHS

BARKER.—On July 13th, at Knutsford, Robert Lewis Barker M.B. Camb.

COOPER.—On July 16th, at Middleton St. George, Co. Durham, James Woodman Astley Cooper, L.S.A. Lond., L.R.C.P. Edin, aged 58.

HEARN.—On July 13th, Reginald John Hearn, M.D. Camb., Barrister-at-Law, of Wimpole-street, W.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.